

American Artisan

Founded 1886

The Warm Air Heating and Sheet Metal Journal

Vol. 96, No. 13

CHICAGO, SEPTEMBER 29, 1928

\$2.00 Per Year

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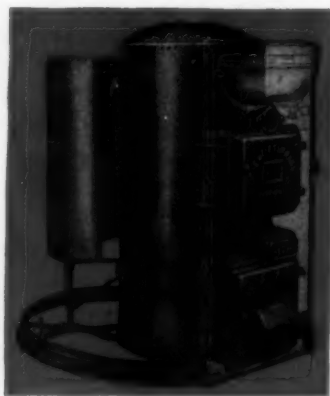
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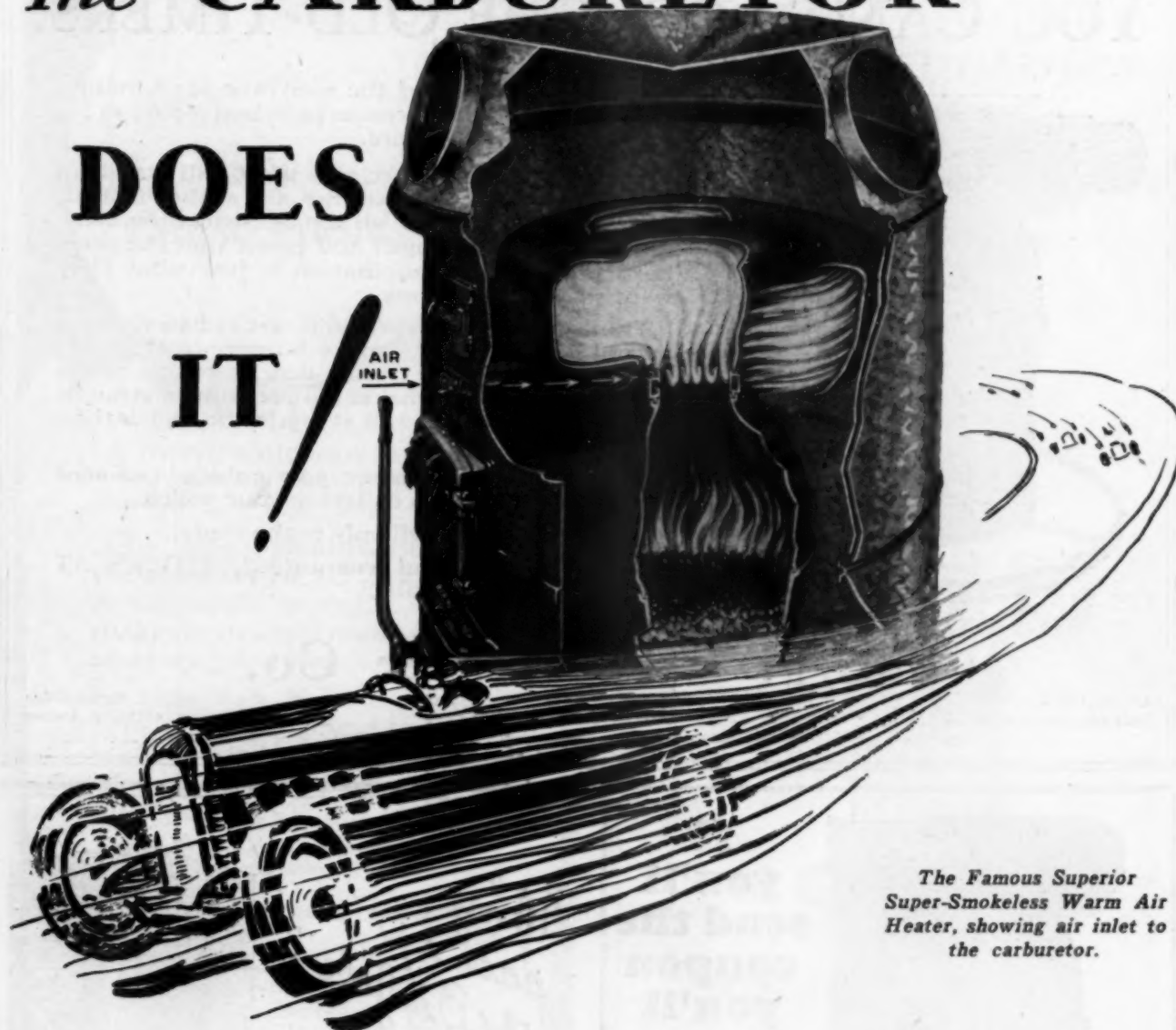
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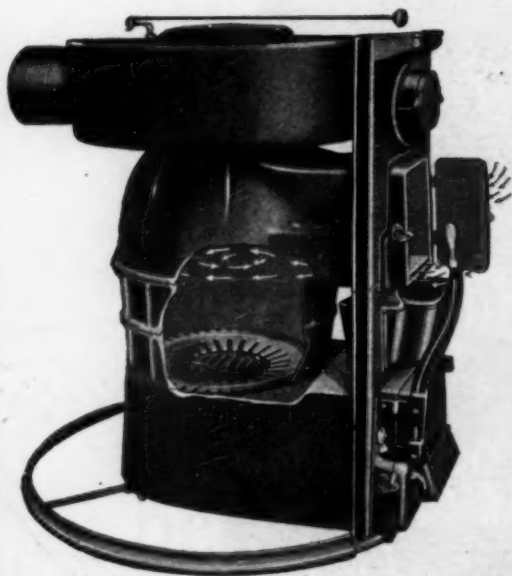
260 Fifth Avenue

New York City

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This apparatus is especially designed for use with Warm Air Furnaces—irrespective of Gas Pressures it insures Even, Perfect Combustion at all times.

This burner heats the radiating surfaces evenly and requires no adjusting.

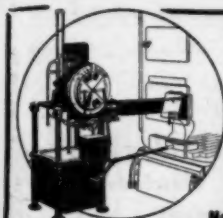
The Wonder Worker Convertible Burner is very easily installed and can be removed in a few minutes.

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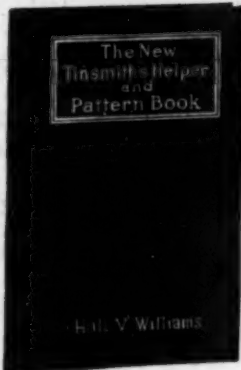
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352
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Published to Promote
Better
Warm Air Heating
and
Sheet Metal Work

American Artisan

The Warm Air Heating and Sheet Metal Journal

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Table of Contents

	Page		Page
Sheet Metal Department.....	177 to 189	Random Notes and Sketches, by Sidney Arnold	190
90-Year Old Metal Roof Stands Silent Tribute to Metal Worker's Art, by L. C. Leimkuhler	177	Warm Air Heating Department.....	191 to 194
Developing Patter for Sheet Metal Guttered Valley Bar for Skylight, by O. W. Kothe..	180	Furnace Installer Finds A. L. Mayers Could Not Have Reduced His Furnace Price.....	191
Some Safe Practices in Welding and Cutting That Will Avoid Accidents.....	182	Dirk Meyers Celebrates 80th Birthday.....	192
Who's Who, Where!.....	189	Does Greater Buying Power Permit Lower Prices on Installations? by George C. Jordan	194
Zinc Serves as Coverage.....	187	Markets	195

AN INSPIRATION

To cultivate the creative habit, with its recognition of a possible ideal in every set of conditions, a sane understanding of the place of beauty in all production past and present, is to produce a tonic which should keep up every portion of the educational fabric.—Walter Sargent.



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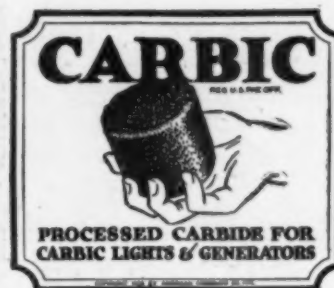
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Break All Previous Records
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TWENTY-FOUR HOUR SERVICE

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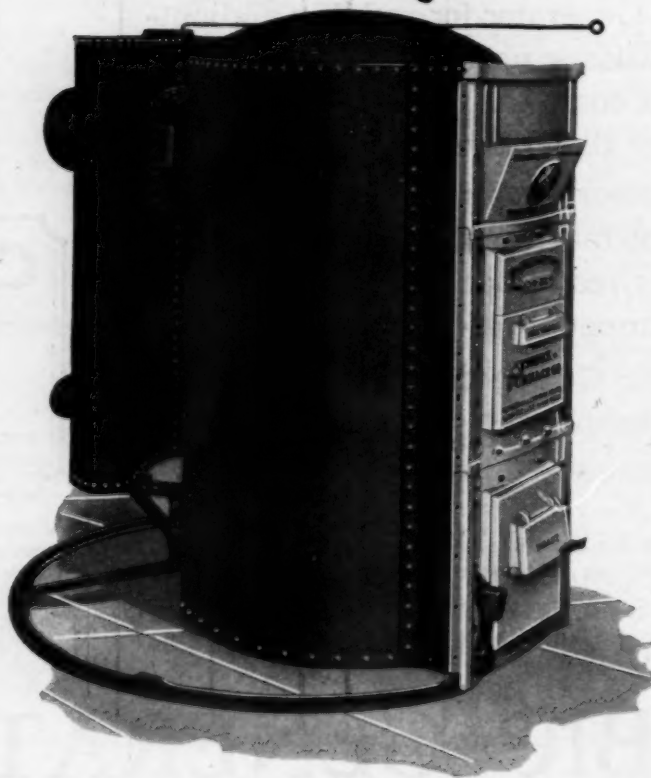
With such a surplus stock, *TORRID ZONE* dealers receive the same prompt service in October as they do in June. We can ship a single furnace or a dozen carloads the day your order is received.

Write for catalog "T" which explains the many important features of *TORRID ZONE* construction that will appeal to your customers. Such features as the riveted and caulked gas-tight construction, the large combustion chamber for quick and responsive heat, the crescent radiator for fuel economy, the locomotive type grates with upright shaker handle and clinker dumping device for convenience in operation, all help to make it much easier to sell *TORRID ZONE*s than ordinary furnaces.



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90-YEAR OLD METAL ROOF STANDS A SILENT TRIBUTE TO METAL WORKER'S ART

By L. C. LEIMKUHLE*

USUALLY, we regard posterity as the special province of literary folk and generals. Although the ordinary artisan, as he goes about his business, may be actuated by the ideal of service—the good job, he rarely, if ever, envisages the results of his labors before the eyes of future generations. And yet these same homely labors, when performed to weld quality materials with the solder of his skill, pass on to posterity something more tenuous and useful than printed words or past destruction.

Occasionally an example of such work comes to light because of its public nature, and serves to remind us of the many silent, self-made memorials to common heroes whose deeds are seldom sung.

Over 90 years ago, Mr. Nicholls, an architect of Jackson, Miss., de-

*Midwest representative Copper and Brass Research Association.



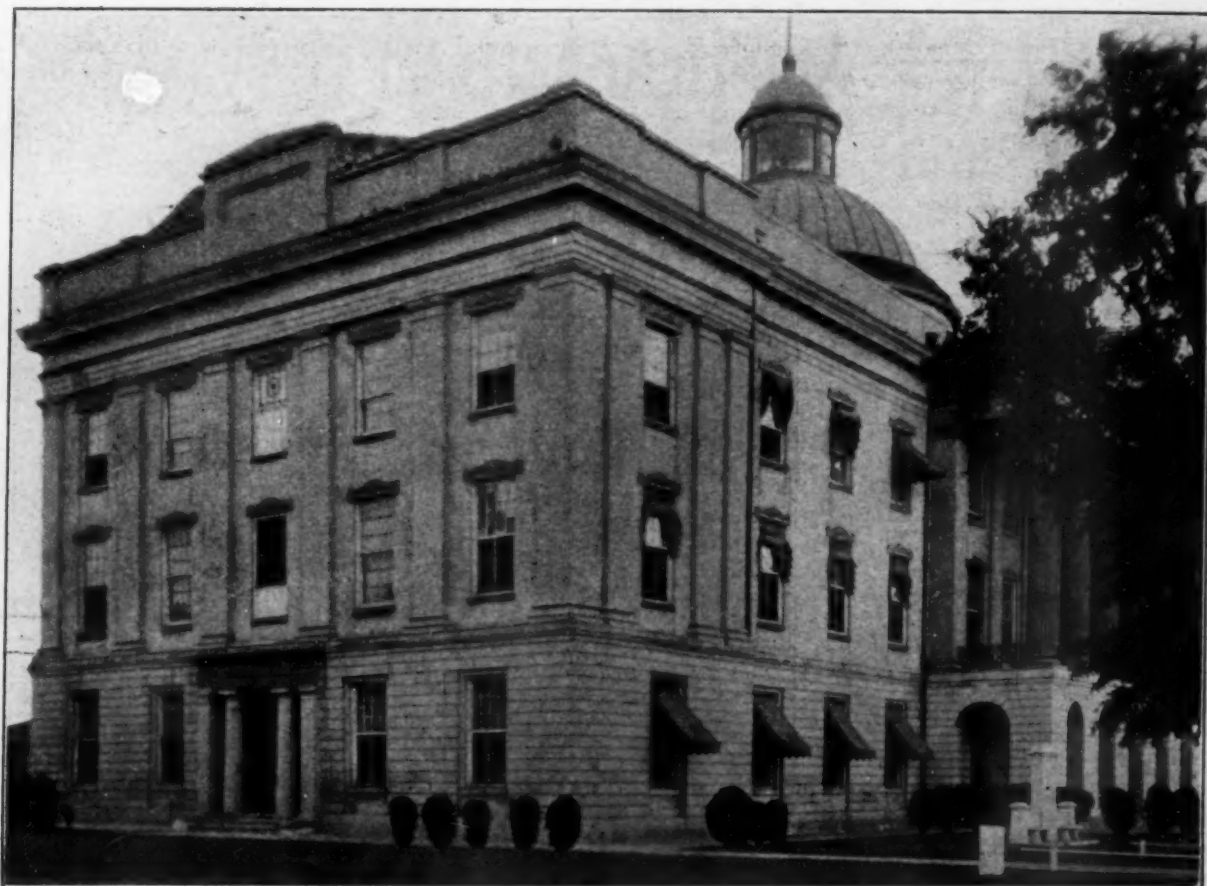
Metal Workers Concerned in the Important Business of Applying a Copper Roof to One of New York's Many New Skyscrapers

signed a structure to house the legislature of his state. Since he followed the best contemporary practice, a specification was included for copper roofs on the two wings and for a copper covering over the great dome.

Some forgotten sheet metal worker was employed to cover the Jackson Capitol with copper. His work on the dome remains after 90 years of service, long after the rest of the structure has been wholly

remodelled, a lasting proof of his care and the permanency of his material.

For 70 years the original building served to shelter the state's executives, and legislature. The history of Mississippi was enacted and recorded under its copper roofs. The ravages of war were able to penetrate where the forces of the elements remained excluded. The structure fulfilled to perfection that faithful service desired by its



State Capital Building Located at Jackson, Mississippi, Which Was Covered with a Sheet Copper Roof Ninety Years Ago and the Roof Is Still in Good Condition

creators.

Then, in 1903, the government of the state, doubting the safety, efficiency and modernness of the venerable edifice, ordered the erection of a new Capitol. In America, architecture is an impatient Muse. Building must keep pace with growth and expediency. The new structure was completed; departments were installed; mute records were transferred. The living thread of government had found a newer needle. Preemptory voices condemned the old building for further use, and for 10 years it stood deserted, desolate and neglected against time. During these years, various parts were removed in salvage, including the copper roofs of the two wings.

But the faithful servant was not fated for destruction. After 10 years without notice, the legislature realized that the old Capitol was still the property of Mississippi and that it stood on state ground. Why not use it to house some of the de-

partments expanding under the pressure of the new South? Rehabilitation was ordered. The work of planning the remodelling to conform to the best modern practice for buildings of this character fell to Link & Trueblood, architects, of St. Louis. They rearranged the interior; inserted modern structural steel to strengthen the building and provide for new partitions; moved stairways to more convenient locations; redecorated the walls; tore out the floors, worn thin by the passage of many thousand feet, and replaced them with reinforced concrete. Another sheet metal worker, possibly, if we believe in poetic justice, the grandson of our forgotten artisan of 1837, addressed himself to the task of recovering the wings from which the original copper roofing had been torn. In a word, the structure was infused with new architectural life and rebuilt with modern sinews. No necessary or desirable alteration escaped the inspection of the architects and their

contractors.

For some unknown reason, the copper covering on the old dome was not removed during the decade of desertion. When the inspectors came to examine it, they pronounced the roofing in perfect condition—ready for many more years of satisfactory service. It was as if the work of the forgotten artisan, impressed in copper, had studied how to serve as he desired in the school of long experience and had finally passed every test. The reconditioning program included no work on the dome. It stands today as it stood over 90 years ago, as formidable as at that moment when the last seam was closed, but now possessing an acquired beauty and dignity peculiar only to copper after prolonged exposure to nature.

This is but one story of the immortality of common labor. Countless others might be told. The work of the artisan faces, throughout the years, attacks more bitter than any human criticism. Yet when well

done, it endures like the Mississippi Capitol dome, to outlive by generations the minds and hands that gave it being.

This example cannot fail to bring a sense of pride to artisans in sheet

commencing to demonstrate the cheapness of slab zinc, and unless we badly misread the signs, the truth of this statement will be accepted by the consuming trade very soon. Thus it should occasion little won-

metric tons more than the 1927 output.

Why, then, it will be asked, has the market been so depressed? An answer to this pertinent question can best be furnished by pointing to the story of lead, with the fate of which zinc is so irresistibly bound, not only as regards actual production, but in selling markets also.

In the case of lead slight curtailment of output combined with a normal expansion in world consumption has regulated the situation. Zinc production, in contradistinction, is higher than ever and adjustment of the position is consequently dependent upon an increased consumption alone. Despite the so-called depression of the zinc industry, it will be seen that there has been the normal advance in world consumption of the metal in 1928, therefore the horizon is brighter now than at any previous time this year, and so long as the present rate of output is not augmented, the improvement in the statistical situation might reasonably be expected to be reflected in the market ere long.

We estimate world stocks of zinc as on September 1, 1928, as follows:

	Metric tons
United States	40,300



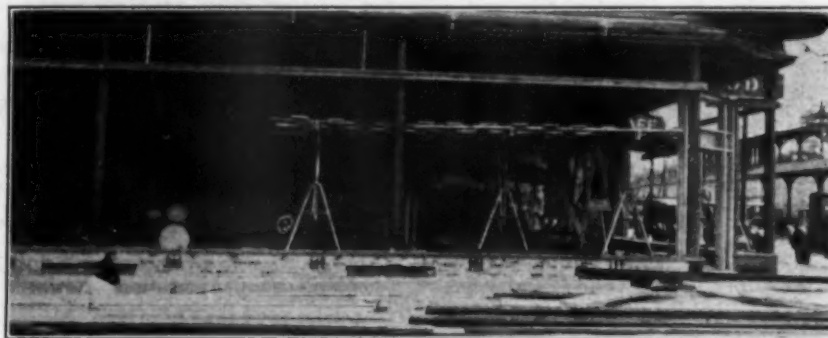
The Porch Shown in the Accompanying Illustration Is Covered with Sheet Copper by J. C. Moebus, 1752 Oregon Avenue, Butte, Montana, the Copper Being Taken from Old Washboilers, Tanks, Cans and Reservoirs That Had Outlived Their Usefulness in Their Original Capacity. The Roof Has Been in Place for Three and One-half Years Without Sign of Wear or Deterioration

metal. It may be said of a poet, "Here is a man who, perhaps, is wasting his time." Of an artisan, though his name remain unknown, it may be said, "Here is a man who certainly produces." Skill alone cannot successfully defeat time, but when that skill is worked into copper its life may beggar memory.

Survey of World Zinc Conditions as of September 17, 1928

It is really no source of satisfaction to us to have actual events fulfill and justify our forecasts of dull markets month after month. However, it is a long lane that has no turning, and we feel that the zinc industry is now within sight of the corner. As expected, lead has lifted itself out of the slough of dependency into which it sank and the differential between the selling quotations for lead and zinc in Europe has substantially narrowed, as we feared, albeit the custom for these kindred metals is to fluctuate in close synchronism. But, if nothing else, the advance in lead is

der if the approaching autumn does not witness a buying wave for slab zinc overtopping any previous experience in that section of the market this year. The London market only needs the encouragement of a



Store Front Being Remodeled and Equipped with Copper Frame Into Which Plate Glass Will Be Fitted

moderate wave of purchasing for the price of G. O. B. or prime western zinc to be lifted at least £1 a ton.

With two-thirds of the year gone, it is possible to attempt a photograph of the position as it is likely to be on December 31, 1928. World production is shaping for a total of 1,414,000 metric tons, or 85,000

Canada	4,000
Germany-Poland	5,800
Belgium	5,600
France	900
Great Britain	1,100
Scandinavia	200
Other Europe	600
Australia (including afloat)	3,800
Far East	800
Elsewhere	2,000
Total	65,100

Developing Pattern for Sheet Metal Guttered Valley Bar for Skylight

Some Considerable Study Is Necessary for the Correct Development of This Pattern

By O. W. KOTHE, Principal St. Louis Technical Institute

RESPONDING to the inquiry of Harry A. Bailey, of Newark, Ohio, I believe the accompanying drawing will give the solution for the valley bar development. In such work the same procedure is followed as for a hip bar for such a skylight! The double nature of the valley bar may tend to confuse the work, but with a little more concentration, the layout will unfold nicely.

At first we draw a right angle as A-B-C, and then measure for the pitch. A quarter pitch would be 6 inches rise and 12 inches run, or reducing these measurements equally, we can divide by 2, and so receive 3 inches for the rise and 6 inches for the run. This permits us to draw the pitch line A-C, and on this line we detail the common bar section D, according to the size the bar is to be. Next detail the ridge bar E and the lower curb F to conform to the lines of bar D.

After this we develop the part plan view, by drawing the valley line X-Y on a 45-degree angle, and then project the intersection lines at E and F thus giving the plan of the ridge E and E', also the part plan of the curb G and G'. On this center line X-Y, we then detail the valley bar design, which according to the correspondent, he desired as at J. Here the altitudes of the bar as well as the glass rest and gutter correspond with the common bar D; only we separate the bar by running a gutter in the center, and also a short fin, which I supposed is to prevent water from getting on the wrong side of the fence, so to speak, and it also adds a little strength. The spread of the gutter in this valley bar can be made at pleasure, but I do not suppose it should be more than 1½ to 2 inches wide in most cases, as it does not

serve any purpose to be wider.

The correspondent showed the fin of the bars of equal height to what the common bar would be, but if these were left to this height, the fin and the glass would serve as a gutter, and in that case the lower fin of the jack bar H must be notched. This will let the water run along the fin, and not form pockets. It is, however, better to reduce the height of the fin, a, to the distance, b, of J so the water can roll off with ease. But in the development it really does not matter what height of fin is used, and so we shall use the full height, and then cut it down while developing the pattern. So next draw the plan lines of valley bar through the section J, and so establish the miter lines for the ridge and curb of plan as shown.

Our next point is to erect a diagonal elevation, which is the process of raising up the plan bar equal in height to the elevation rise. So we use a paper strip, as M-N, and on it project all the altitudes from bar E and F in points shown. Next, we transfer this strip to the line M'-N' which is at right angles to X-Y, and we mark off these points, and then square them out parallel to axis X-Y. Then from each point in miter at ridge and also the curb of plan, we project lines to intersect those projected from M'-N'. This gives those intersections shown, which enable tracing the miter lines of elevation of valley bar.

Here, observe, we have developed the bar to the full fin a', and so to know definitely where the short fin and also the center fin intersect the miter lines we must develop the true section through bar as J'. This is done by picking the widths on a paper strip W and set-

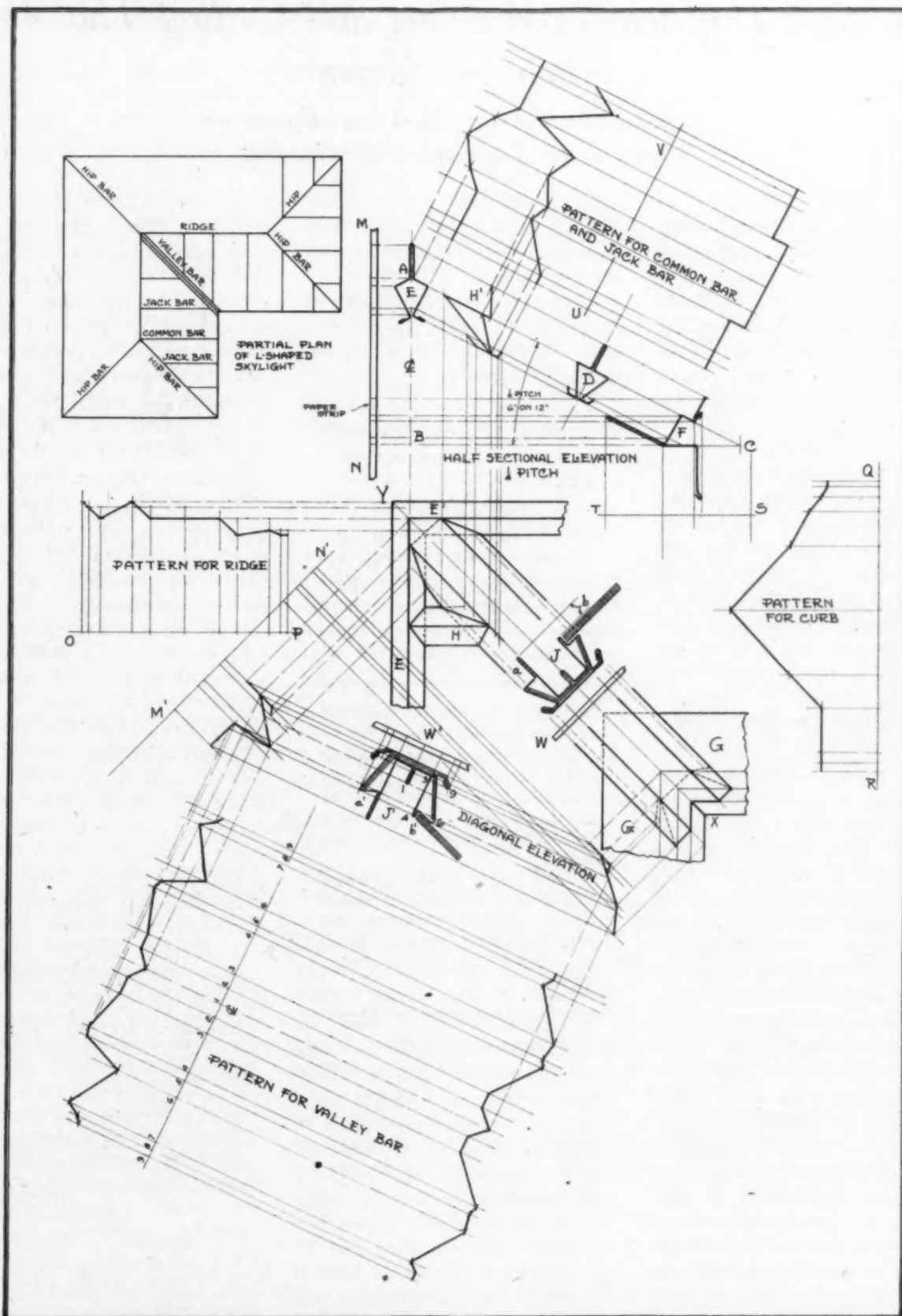
ting them parallel to the diagonal bar as W', and then project lines into the diagonal valley bar, thus giving the intersections for true valley bar J'. So the point 1 and 4 of the side, b', are projected into the end miters, which establishes these intersections.

So that to develop the pattern for the valley bar we pick the girth spaces from J' as 1-2-3-4-5-6, etc., to 9, and set them off on each side of a center line as the spaces 9-9 indicate. These must be stepped off at right angles to the diagonal bar, and then all stretchout lines must be drawn parallel to the bar, which enables developing the pattern as shown. The jack bar H is developed identical to the ordinary bar, only it is reversed in position, which gives the miter line H'. The pattern for the common bar and the jack bar are then developed on the girth U-V. The distance between the upper miter cuts being the jack bar patterns, the one to fit on the ridge and the other on the valley bar.

The ridge pattern is set out as an ordinary square miter, picking the girth from detail E and setting it off as O-P, and developing the miter as shown. The curb pattern is also developed, in this case by picking the girth from F, and using the width of the projections on S-T, we set them off from the line Q-R in pattern the same as for any square miter. Laps for soldering and riveting must be allowed extra.

**Frank A. Weidman
to Leave Inland
Steel October 1st**

Frank A. Weidman, for the past seven years special representative of Inland Steel Co., Chicago, has resigned, effective October 1st. He became associated with the Inland



Patterns for a Guttered Valley Bar for Skylight

company as an associate of Walter C. Carroll, now president of Oil Well Supply Co., Pittsburgh.

Prior to going with Inland, Mr. Weidman had spent 12 years with the American Sheet & Tin Plate Co.

at Pittsburgh. He has as yet made no announcement as to his future plans.

Some Safe Practices in Welding and Cutting That Will Avoid Accidents

Intelligent Use of Welding Equipment Follows Thorough Understanding

PROMINENT among the factors which characterize modern industrial establishments and differentiate them from the factories of a generation ago, is the emphasis placed on safety. Plants and departments vie with each other in establishing safety records. Safety campaigns extend even beyond the plant to include many of the daily activities of company personnel.

Early in the development of safety programs it was found that the mere setting up of rules was not sufficient. It is necessary to arouse the interest of each individual in the program to develop a consciousness of the principles of safe practices. How best to do this is a problem that varies with the type of plant, general intelligence of workmen, and the nature of the equipment used.

Oxy-acetylene welding and cutting equipment is designed for use under the wide variety of operating conditions that exists in plant and field work. Manufacturers have provided all parts of the equipment with adequate safety devices, and the operation of welding and cutting equipment is not at all hazardous. Intelligent use of the equipment follows naturally from an understanding of the properties of the materials used and the function of the various parts.

Although the information necessary to a thorough understanding is not difficult to acquire, it is most important, and all users of the oxy-acetylene process should see to it that none but properly qualified men are permitted to operate the equipment.

It is the purpose of this article to review the fundamental principles that govern the proper handling of gas welding and cutting equipment.

Oxygen

Precautions to be observed in

handling and using oxygen follow naturally from a few familiar facts regarding oxygen supplied for welding and cutting:

1. Pressure in a full cylinder of oxygen of the Linde type, for instance, is 2,000 pound per square inch at 70 degrees F.

2. Pressure within the cylinder increases as the temperature rises, and falls when the temperature decreases.

3. Although it does not burn, oxygen supports combustion.

Obviously oxygen cylinders must be of exceptionally sturdy construction to withstand the high internal pressure. All cylinders used must be constructed in accordance with

Select the proper welding rod for the job at hand.

The orifice in the welding head is accurately proportioned for the proper flow of gases. Don't clog the flow by rubbing the tip end on the work.

Two years is the average life of a good hose in shops where it isn't walked on, crushed under heavy objects, or allowed to lie in grease or oil.

specifications of the Interstate Commerce Commission. An oxygen cylinder is a hollow seamless steel shell made from a single piece of high-grade steel by a series of drawing operations. It is carefully heat-treated to develop maximum strength and toughness. The upper end of the shell is swaged down to form a neck into which the valve is inserted. Completed cylinders are given a hydrostatic pressure test of 3,360 pounds per square inch, and this test is repeated at 5-year intervals during the life of the cylinder.

Oxygen cylinder valves must also be of special construction in order

to operate efficiently at such high pressures. They must not leak when either open or closed.

Since, as noted above, heat causes an increase in the pressure within the cylinder, oxygen cylinders are provided with safety devices to prevent the development of excessive pressure within the cylinder. These devices function and release the gas if the cylinders are exposed to fire.

Handling Oxygen Cylinders

Although oxygen cylinders are purposely designed to withstand the shocks incidental to ordinary usage, they should nevertheless be handled with due regard to the fact that they contain gas under high pressure. Care should be taken at all times to prevent them from being knocked over or dropped. Where cylinders are moved about the plant by means of a derrick or crane, the cylinders should always be firmly secured in a suitably designed cradle or boat. Never use slings or an electric magnet.

Because of the fact that oxygen under pressure is likely to react violently with oil or grease, particular care should be exercised to see that oxygen cylinders are kept from contact with oil at all times.

Storage of Oxygen Cylinders

The fact that oxygen supports combustion will immediately suggest the advisability of storing oxygen cylinders separately from readily combustible material. Accordingly charged oxygen and acetylene cylinders should be stored in separate rooms or compartments and there should be a substantial approved wall between. If the cylinders are simply kept in one corner of the plant, there should be no possibility of oil dripping on them from overhead shafts or machinery. When stored in such places make certain that the cylinders are well out of the way so that there is no possibility of

their being knocked over or of heavy weights falling on the cylinders.

It has been noted above that the safety device on an oxygen cylinder will function if the temperature gets too high. Since this releases the entire contents of the cylinder, the cylinder should not be stored or left standing in any place where it may become overheated. Where cylinders are stored in the open they should be protected against accumulations of ice, snow and water.

Use of Oxygen

When oxygen cylinders are in actual use, the opportunities for contact with oil and grease are multiplied and special care must be taken to avoid such contact. Do not handle cylinders or operate valves or touch any oxygen equipment with oily hands or gloves. Do not place cylinders where oil or grease may drop on them.

It is always good practice to mount cylinders on a truck or support them in some way so that they cannot be accidentally knocked over. They should be kept away from the actual welding or cutting operation.

Oxygen should never be used without a regulator to reduce and control pressure.

Before moving a cylinder from one position to another, always close the cylinder valve and replace the valve cap. The valve should also be closed when work is finished and when the cylinder is empty.

Never use an oxygen cylinder as a roller or support for work even though it may be considered empty.

Because of the activity of oxygen, particularly in the presence of oil or grease, it must never be confused with compressed air. Do not use oxygen in pneumatic tools, to start Diesel engines, or for head pressure in a tank of any kind.

Acetylene Cylinders

Precautions to be observed in handling acetylene also follow from a few well-known properties of this gas:

1. Acetylene will burn and will under certain conditions form explosive mixtures with air.

2. At pressures over 15 pounds

per square inch, acetylene may decompose violently if subjected to heat or shock. This action is an inherent property of acetylene itself, and is quite distinct from the formation of explosive mixtures of acetylene and air.

Because of the property mentioned in the preceding paragraph, acetylene cylinders must be especially constructed in order to carry acetylene under pressure. All Prest-O-Lite cylinders are constructed in accordance with the strict specifications laid down by the Interstate Commerce Commission. Acetylene, as supplied in cylinders, is properly

Old hacksaw blades with teeth ground off are useful shims.

The fewer sparks in steel welding, the better will be the weld metal.

Slack the adjusting screw of the oxygen regulator when coupling on to a full cylinder.

Bronze-welding fender cracks with small flame makes a smooth, strong, easily finished job that can be hammered without cracking.

called "Dissolved Acetylene."

Washed, dried, and purified acetylene is compressed into steel cylinders which have had their complete interior previously filled with a porous substance. The porous substance is saturated with a liquid solvent, usually acetone, which has the property of absorbing or dissolving many times its own capacity of acetylene at atmospheric pressure. When pressure is applied, the solvent continues to dissolve acetylene, absorbing for each atmosphere of pressure the same quantity of gas that it did at atmospheric pressure. The quantity of the solvent in the cylinder is so regulated that the cylinder will contain about ten times its own volume of acetylene for each atmosphere of pressure that is on the gas. Cylinders are, as a rule, charged to 15 atmospheres pressure at 60 degrees Fahr., so that they contain about 150 times their own volume when charged. This com-

bination of a porous material and a solvent makes impossible the propagation of an explosion into the cylinder.

As in the case of oxygen cylinders, safety devices are provided. These are the fusible plug type, and melt, releasing the gas, if the cylinder is exposed to fire.

Handling Acetylene Cylinders

It is obvious that acetylene cylinders should be carefully handled as knocks or falls may damage valves or fuse plugs or possibly the cylinder itself. Cylinders should be placed in cradles or platform carriers whenever moved by crane or derrick.

Storage

Acetylene cylinders should always be stored standing upright with the valve end up and in well ventilated locations. They should not be stored in the same room or compartment with oxygen cylinders. They may be stored in the open, but should be protected against accumulations of ice and snow. Cylinders stored inside buildings should be located remote from highly combustible materials and be protected from mechanical injury or tampering.

Use

After the regulator is attached to the valve of an acetylene cylinder and the valve is opened, it is advisable to test for leaks by applying soapy water. In case of a leak around the valve stem, close the valve and tighten the gland nut.

Never use acetylene from a cylinder without first attaching a regulator. Acetylene regulators should never be adjusted to deliver gas at a pressure greater than 15 pounds per square inch.

With Prest-O-Lite cylinders, always use a tee handle wrench for opening the cylinder valve. Open the valve slowly, $1\frac{1}{2}$ turns only, and leave the wrench in position while the cylinder is in use, so that the valve may be closed quickly if desirable.

Never under any circumstances attempt to transfer acetylene from one cylinder to another.

Wherever it seems necessary to

couple acetylene cylinders in order to supply sufficient acetylene for a very heavy job or for a system of shop piping, always consult the manufacturer, as such coupling devices must be of a type approved by the insurance underwriters.

Calcium Carbide

It is well known that acetylene is made by bringing calcium carbide into contact with water. This reaction of calcium carbide with water or moisture in any form determines the precautions that must be observed in handling and storing this material.

Calcium carbide is shipped in airtight metal drums and consequently the storage problem reduces itself to the matter of providing a dry place. No combustible material of any sort should be in the immediate vicinity as the use of water to put out a possible fire might result disastrously through the contact of water with carbide.

Calcium carbide should not be allowed to stand exposed in open drums as the moisture in the air may be sufficient to cause slow generation of acetylene.

Generators and Piping Systems

The properties of acetylene noted above govern the precautions to be taken in operating acetylene generators. There are in addition the various mechanical arrangements which vary with each type of generator, and consequently the printed rules and instructions supplied by the manufacturer should be carefully followed.

The operation of acetylene generators, acetylene piping systems, and oxygen manifold installations is important work, and should never be done by anyone who has not been examined and adjudged competent for this work by his superiors.

Regulators

In using oxygen and acetylene from cylinders, each cylinder must be equipped with a suitable regulator. Regulators are necessary for two reasons: First, to reduce the cylinder pressure down to the relatively lower working pressure required at the blowpipe; and second,

to maintain the working pressure constant during operation of the equipment. By means of an adjusting screw, this working pressure may be set at any desired value within the range of the regulator capacity. Once set, the regulating mechanism will maintain this pressure.

Obviously the regulator mechanism must function with great accuracy, and still the regulator itself must be sturdy enough to withstand normal usage under shop and field conditions.

It should be remembered that regulators must be handled with a reasonable amount of care if they are to operate continuously without

Aluminum is easily welded in a vertical position by practiced operators.

How often do you find a pair of tongs somewhere else than on the correct hook?

Keep the welded surface flat right up to the edges in a building-up operation; this will increase speed and will require less machining.

trouble. They should never be dropped, and cylinders to which they are attached should always be supported in such a way that they cannot be accidentally knocked over. Regulators should be disconnected from the cylinder valves when moving cylinders that are not mounted on portable trucks.

Since the interior construction of regulators is such that small particles of dirt and dust may seriously interfere with efficient operation, most regulators are provided with dust plugs. These fit in the union nut by means of which the regulators are attached to the cylinders. Dust plugs should be in place whenever the regulators are not connected to cylinders.

Before attaching a regulator to the cylinder, the cylinder valve should be opened for an instant to blow out any dust and dirt that may have accumulated and that might otherwise enter the regulator. After tightening the regulator union nut, make certain that the pressure ad-

justing screw is released before opening the cylinder valve. The cylinder valve should be opened slowly. If opened quickly the sudden rush of high-pressure gas might strain the regulator or injure the pressure gauges.

(To be continued)

All-Steel Airplane Hangars Coming Rapidly Into Vogue

The interest that has recently been aroused in the question of commercial flying has brought out a new field of activity for sheet metal contractors in the building of airports and airplane hangars. In keeping with this demand, the George L. Mesker Company of Evansville, Indiana, has designed several plans for such hangars based on the use of the Mesker Standard Bowstring Steel Roof trusses.

The roof spans come in various sizes up to 110 feet wide, giving a low curved roof, which is ideal for a flying field. Arc roofing sheets made of copper bearing steel is another Mesker development made to fit over these trusses. Steel sections for the rest of the frame, made in accordance with the specifications of the American Institute of Steel Construction, are easily adapted to use with either masonry walls or with interlocking galvanized steel siding. This siding, a Mesker product, is made with beads at about 3-inch centers and a stiff lock joint, making a hangar that is easily erected and one with a good appearance.

One of the greatest problems on buildings with wide doorways, such as are necessary for an airplane hangar, is the question of doors. The Mesker Company has designed several systems of sliding doorways. One system recommended is a doorway suspended from a heavy track that is curved at the sides to run the doors along the inside of the building. The doors have heavy steel frames with steel sash glass in the upper portion. They are hinged together in pairs and have bottom guides and bolts to keep the doors in position when closed.

The New RUDY "GIANT" HEATER

DESIGNED TO WITHSTAND HEAVY FIRING

**WHY
IT SOLVES THESE
HEATING
PROBLEMS**



The RUDY "GIANT" HEATER

ITS castings are thicker, its weight is greater, its grate surface is larger and its radiating surfaces more generous than are required of the ordinary domestic heater. It is made to heat a larger volume of air more quickly without damage to the furnace.

Are You Getting the Big Business?

T. W. Torr, Heating Engineer with the Rudy Furnace Company, will personally supervise your layout.

THE RUDY GIANT JOB

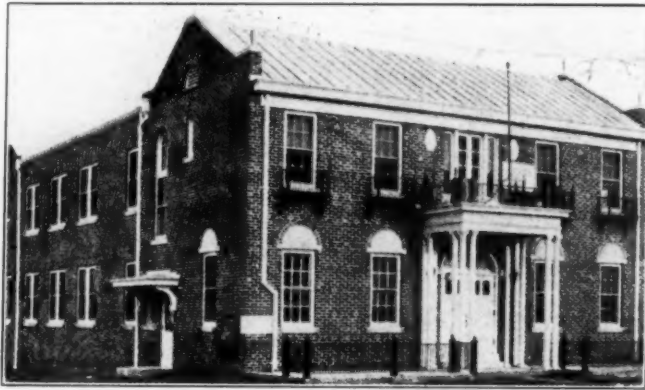
- | | |
|---------------------------|---|
| 1. Is More profitable. | 4. Has patented Rudy damper. |
| 2. Has no competition. | 5. Is backed by hundreds of successful big installations. |
| 3. May be gravity or fan. | 6. Is guaranteed by a successful company. |

Just One Reason Why Rudy Dealers Succeed---
"24 HOUR SERVICE"

THE RUDY
Dowagiac



FURNACE CO.
Michigan



Sorosis Club, Oklahoma City



*Private Dwelling Covered with
Zinc Shingles*

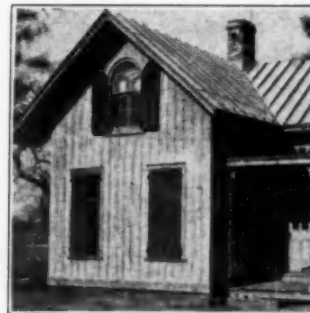


Standing Seam Zinc Roof

ZINC SERVES



*Smart Dwelling at
Philadelphia*



Small Dwelling



New Women's Dormitory

S AS COVERAGE



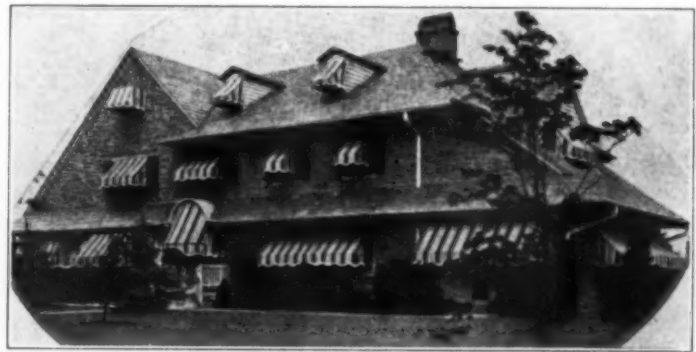
Sheet Metal Contractor's
Home, Baltimore



ing Covered with Zinc



dormitory, University of Illinois



Country Mansion, Winfield, Pa.



First Congregational Church
Fulton, N. Y.



St. Mary's Eukranian Greek
Catholic Church, McKees
Rocks, Pa.

Thatcher "METEOR" Warm Air Furnace



Thatcher "METEOR" Made By The Makers Of The "Celebrated" Thatcher Tubular

The Thatcher "Meteor" Furnace is a well constructed, easy-to-operate, economical warm air furnace. Its sturdy construction and fuel saving features make it a worthy companion product to the Celebrated Thatcher "Tubular."

The "Meteor" has a large combustion chamber—ample for heavy firing. It is air-tight and dust-proof—two obviously desirable features. Triangular grates are standard, and the "Meteor" is furnished with upright shaker handle if desired. The dependability—ease of erection and operation and low operating cost make the Thatcher "Meteor" Furnace desirable to dealer and home owner alike. If you are not now handling the "Meteor" we shall welcome an opportunity to place additional facts in your hands. Write

THE THATCHER COMPANY

39-41 St. Francis St., Newark, N. J.

New York: 21 W. 44th St.

Chicago: 341 No. Clark St.

THATCHER

BOILERS-FURNACES-RANGES

Mention AMERICAN ARTISAN in your reply—Thank you!

WHO'S WHO, WHERE!

ESCANABA, MICH.—The Dewey Furnace Co. has incorporated its business under the same name, with a capital of \$25,000, and will continue at the same location, 108 South 12th Street.

DETROIT, MICH.—The General Metal Weather Strip & Screen Co., Inc., has been incorporated at 7908 W. Jefferson Avenue, with a capital stock of \$5,000.

PORTLAND, ORE.—The Portland Metal Spinning Works, sheet metal, will erect a new plant on the corner of Grand Avenue and Lincoln Street.

WATERLOO, IA.—The Waterloo Sheet Metal and Manufacturing Co., Miles and Commercial Streets, have sheet metal contract for Catholic church in Fairbank, Ia.

SEATTLE, WASH.—The Seattle Cornice Works, 1730 First Street, has sheet metal contract for Shell Oil Co. office building.

SAN FRANCISCO, CAL.—The Guilfooy Cornice Works, 1234 Howard Street, has contract for sheet metal work for office building of Phoenix Assurance Co.

LOS ANGELES, CAL.—McCluney Brothers, 1022½ Santa Fe Avenue, has been awarded sheet metal, ventilation and fire doors contract for Louis B. Meyer office building there. The J. Rosen Cornice Works, 1416 S. Central Ave., has contract for bronze elevator doors, and the Forderer Cornice Works, W. M. Garland building, has contract for hollow metal elevator doors.

MANHATTAN, KAS.—The Manhattan Sheet Metal Works has the heating contract for the Eugene Bible University in that city.

KANSAS CITY, MO.—The Gorman Furnace Co., 914 East 48th Street, has been awarded the furnace contract for residence of A. V. Grable in that city.

CHICKASHA, OKLA.—The DeHart Sheet Metal Co. has been awarded contract for heating plant for residence of J. F. Faust, in that city.

TULSA, OKLA.—The NuWay Furnace Co., 1125 S. Peoria Street, has been awarded heating contract for O. E. Sump residence, northeast of that city.

HOUSTON, TEX.—M. J. Schlom, 1601 N. Main Street, has sheet metal contract for \$125,000 Sunday School building of Second Baptist Church in that city.

SAN ANTONIO, TEX.—The Turner Roofing & Supply Co., 1300 E. Houston Street, has been awarded the sheet metal and roofing contract for \$600,000 plaza hotel, in Corpus Christi, Tex. The American Sheet Metal Works, Builders Exchange building, San Antonio, has the hollow metal window contract, and A. Salisbury, of same address, has the hollow metal Kalamein and tin clad door contract on same building.

NEW ORLEANS, LA.—The American Sheet Metal Works, 331 N. Alexander Street, has the sheet metal contract for new dormitory of New Orleans Female Dominican College.

"Kant Krush" Drain Screen Has Unusual Rigidity

Sheet metal contractors have long sought a device for insertion in drain pipes which would not only permit the water to pass freely down the drain, but would also have strength sufficient to withstand the pressure of ice, etc., when in position on the drain.

The Grand Rapids Wire Products Company, Grand Rapids, Michigan,



One Use for Drain Screen

have had on the market for some time what they term the "Kant Krush" conductor screen. The device is made entirely of wire and welded, and is so designed that although it permits the water to flow down the drain freely, it does not permit foreign matter to do so.

The sizes of the device are so varied that it can be used on almost any open drain of the type ordinarily met with on the roof or gutter.

The accompanying illustration will give the reader a good general idea of what the device consists, but complete information concerning this little device can be had by writing the company at Grand Rapids, Michigan.

Niagara Machine & Tool Works Opens Branch in New York City

The Niagara Machine & Tool Works, with main office and factory at Buffalo, New York, has opened a district office at room 1373, 50 Church Street, New York City, H. D. Rosenkrans, district sales manager.

The Niagara Machine & Tool Works was organized in 1879 and has devoted the past fifty years exclusively to the designing and manufacturing of machines and tools for sheet metal working.

Mr. Rosenkrans, who will have charge of the New York office, has been with Niagara nine years, having served time in the engineering, advertising and sales departments. He will now devote his entire time to the metropolitan district.

Territory will include Fairfield county, Connecticut; Westchester and Rockland counties, Manhattan Island, Long Island and Staten Island, New York, and northern half of New Jersey north of Trenton.

In addition to the New York office, the company has offices in Philadelphia, 617 Harrison Building, and in Pittsburgh, Park Building.

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

Bill Wahler, 3715 Elston Avenue, Chicago, who considers himself as quite a furnace doctor and with good reason, drove up to a small town garage and asked if he could get a puncture fixed there.

The young mechanic looked at him closely a minute and then asked:

"Ain't you the guy that operated on my furnace last year?"

"I am, sir, but what has that to do with my tire trouble?"

"Nuthin'. Only you ain't diagnosed it proper. You got a violent case of circumferential flatulency of the perimeter, an' it'll cost you five bucks."

* * *

I had a very pleasant visit with E. M. Weideman, Chicago representative of the Fox Furnace Company, on Saturday of last week. Mr. Weideman told me that the warm air heating boys down in Evansville, Indiana, are getting ready to have the Standard Code incorporated into the city building ordinance. Here's hoping they succeed.

* * *

A visitor to our office on Tuesday of this week was R. Satterholm of the Superior Heat Appliance Company, 231 West Superior Street, Chicago. Vacations are about over now, and warm air heating men are all as busy as they can be these days, but in spite of that fact many of them still find it convenient to drop in to our office for a moment to tell us how they are getting on. We appreciate this very much indeed. Mr. Satterholm is one of the younger warm air furnace men and is getting along very satisfactorily in his business.

* * *

Nothing But the Truth

L. M. Burt, President of the Greater Chicago Warm Air Heating Association, as a witness had given the prosecuting attorney a rather difficult time. At length exasper-

ated by Mr. Burt's answers the attorney asked him whether he was acquainted with any of the jury.

"Yes sir, more than half of them."

"Are you willing to swear that you know more than half of them?" demanded the man of law.

The other thought quickly.

"If it comes to that," he replied, "I am willing to swear that I know more than all of 'em put together!"

* * *

"Why so depressed, Brown?"

"The horrible cost of living, old chap; constant bills for materials, paints and shingling."

"What, house?"

"No, daughters."

* * *

Generous Soul.

'Dolph Munkel of Columbus, O., surprised the new salesman kissing his pretty stenographer.

"What's this, Thompson? Is this what I pay you for?"

"No, sir; I do this free of charge."

* * *

Maid—"The furniture man is here."

Mistress—"I'll see him in a minute. Tell him to take a chair."

Maid—"I did, but he said he would start with the piano and radio!"

* * *

Call a Chiropractor

"Have you given him anything or done anything to relieve him?" asked the young doctor, who had fared far into the backwoods to see a patient in the dead of a stormy night.

"Well, no, doc—that is to say, nothin' to speak of," said the wife of the patient. "I had him soak his feet in almost b'ilin' water with a lot of mustard in it, an' I clapped a red-hot plaster on his back, an' another one on his chest, an' I've put a couple of blisters I had in the house under his arms, an' a bag o' cracked ice on the back of his neck, an' had

him drink a pint o' ginger tea with a dash o' rum in it jes' as hot as he could swaller it, an' I follered that with some yarb bitters one of the neighbors sent over, an' I had him take five or six pills out of a box I got one day from a man that come along with medicine to sell, an' he's had three or four spoons o' Quakem's pain-killer an' one o' these sidelitiz powders, but I didn't feel like as if I ort to give him much o' anything, or try to do much for him until you come an' see what you think ailed him."

* * *

Perfect Ground.

"So you want a divorce, Rastus?"

"Yes, suh, judge, yo' honah—Ah sho'ly does."

"What's the trouble?"

"'Count ob ma wife makin' an Ironical remark."

"An ironical remark?"

"Yes, suh—she says if you don't go to work, I'll hit you in the face wid dis flatiron."

* * *

Mrs. Mike Reif: "Oh, Mike, I've discovered that the woman next door has a hat like mine."

Mike Reif, Chicago sheet metal contractor: "Now, I suppose, you'll want me to pay for a new one."

Mrs. Reif: "Well, dear, that would be cheaper than moving."

* * *

"Now, see heah, nigga, if you wanted to change a pumpkin into a squash, what would ya do?"

"Ah don't know, Circumlocution, but Ah specks you kin gib me de answer."

"Well, Introspection, ef you jes keep it, it would allus be a pumpkin, but ef you throwed it up into de air it would come down a squash."

* * *

"See here," Harry Stanyer, Dallas, Texas, declared, "it is a violation of the law now to have more than one wife, and the law must be obeyed. When you get back home you tell all of your wives, except one, that they can no longer look upon you as their husband."

"You tell 'em," suggested the Indian after a moment's reflection.

Finds A. L. Mayers Could Not Have Reduced His Furnace Price

Advises a Continuance of Doing Standard Code Work

By FURNACE INSTALLER

WITH regard to the estimate of \$387.00 on the A. L. Mayers job, it would appear that Mr. Mayers had given his best figure for a first-class job.

An owner of a house of this size certainly should be able to pay at least \$387.00 for the heating system.

Mr. Mayers couldn't possibly cut his price and, as his first price is always his last price and he does nothing but first-class work, he may lose the job.

The difference between the two figures submitted might mean the difference between a comfortable and an uncomfortable home.

As Mr. Mayers has done his best to show his prospect that he is not only selling him a furnace, but a heating system that he can guarantee to keep him comfortable on the coldest day, I would say that we should feel sorry, first for the home owner, blinded by price, and second for the low bidder, who is sure to have trouble later on unless he does the job right.

It will be discouraging to Mr. Mayers if the competition of which he speaks continues, but the difference in price is not sufficiently great for him to lose every job. If he continues to do nothing but first-class work at a fair price, the jobs he installs will speak so loud for him that he will secure enough business to keep him busy without working for people that can afford a home of this size, but are not willing to pay a furnace man a reasonable profit for his work.

I do not believe in adding \$50.00 to a furnace job just because the buyer is a friend of mine and I can get it. Also, sometimes it is necessary for some firms to get more for their work, due to their increased labor costs. Labor not properly

supervised or delayed waiting on material to be delivered to the job is expensive.

I do believe, however, that my customers should pay me a fair price for a first-class job.

Mr. Mayers states that his bid was \$387.00 and he figured his cost was \$305.00. The job is apparently what we term a cash job and a new house. Did the cost, \$305.00, include overhead expense? If not, then the \$82.00 difference would hardly be enough to cover overhead and 10 per cent profit. On the other hand, if the cost of \$305.00 included overhead expense, and the \$82.00 difference was clear profit, he would not have to do such a large volume of business to make a real nice profit, for his labor cost and overhead expense should also include his salary.

In the following estimate I have used figures which represent the cost of material already purchased:

Furnace with casing made in my shop.....	\$125.00
Smoke pipe, paper and paste, wire, sand and cement	3.00
1 12" run to 12x14 ox. cop. base reg.....	8.00
4 10" runs to 10x12 ox. cop. base reg., at \$5.72.....	22.88
1 9" run to 9x12 ox. cop. floor reg.	4.25
3 9" runs to 3½x12 W. P. ending with 9x12 B. J. wall registers, at \$7.25...	21.75
1 8" run to 8x10 ox. cop. base reg.	4.25
Material for two 18" cold air ducts at \$15.00.....	30.00
Material for one 16" cold air duct	12.50

Labor to Erect

30 hours' time, mechanic, at \$1.25	37.50
---	-------

30 hours' time, helper, at .60 18.00

Cost of labor and material	\$287.13
Add for overhead expense 100 per cent of productive labor cost	55.50

Cost of labor and material with overhead...\$342.63

Based on 10 per cent profit, the selling price or bid submitted would then be \$380.00.

On this same installation one of my competitors, who is able to sell me material as cheap as I can buy out of town, would be able to quote \$365.00, and I am afraid that any bid less than that would be a mistake.

The reason I know what my competitor's figure would be is that he has explained his method of figuring and I know his material costs him at least 20 per cent less than mine.

This job is easily worth \$400.00, due to the fact that the warm air runs on a house of this type, as well as the cold air ducts, may run longer than the average.

The job would require considerable personal supervision. You can't send a man out on a job like this to wall pipe the house after the carpenter is supposed to have cut the holes and expect a satisfactory heating job, without careful consideration.

Each operation must be talked over with owner or contractor, the heating contractor keeping in mind that this type of house is usually hard to heat and his registers, wall pipe, cold air faces and furnace must be properly located.

Of course, a heating plan might be prepared in the beginning satisfactory to owner, contractor and furnace dealer, with the understanding that no changes are to be made

unless "O K'd" by the furnace dealer.

In explaining the above method of estimating will say that I consider the average run of cellar pipe 8 feet long, and for a 12" run to a 12x14 ox. cop. baseboard register I made up a list of what I pay for:

- 1 12x14 ox. cop. baseboard register
- 1 12x14 baseboard box
- 1 boot
- 2 12" elbows
- 8 ft. 12" hot air pipe
- 1 12" collar
- 1 12" damper

These, added together, give me the cost of the average run as above, which I use instead of continually listing the different items that make up the completed run.

In connection with cold air ducts I make part of them up with the elbows, angles and stubs manufactured. The cost used is for the average cold air duct.

I have a list of the average time necessary to perform the different operations in connection with the furnace installation and my labor cost as above is based on this list.

Keeping the labor separate in this manner gives me a chance to add for anything out of the ordinary in the way of extra labor.

Having had trouble with 8" runs to 3½x10 wall pipe heating second floor rooms, we have discontinued them in favor of 9" runs to 3½x12 wall pipe wherever possible. The difference in cost is very little.

There is some difference in the cost of furnaces, and while there should not be so much difference in Mr. Mayers' estimate and that of his competitor, there might be some on this account.

You are doing a very good work in trying to induce the different dealers to exchange through your paper their ideas of costs or selling prices on different jobs.

Perhaps it would be a good idea if the Better Business Committee of the National Warm Air Heating Association would co-operate with you and make up a list of material costs, based on regular prevailing discounts on registers and pipe and

fittings, etc., so that small dealers would know the average cost of material for different runs of pipe.

In submitting this estimate of \$380.00 cash on the job on which Mr. Mayers' bid was \$387.00, I am taking into consideration the statement that competition is keen and there already is a lower bid submitted.

I would suggest that if his competitor is not a subscriber, it would be worth \$2.00 to Mr. Mayers to make him a present of a year's subscription to the AMERICAN ARTISAN. It will help him become a better competitor.

There should also be a way to

inform the manufacturer of any dealer that is installing their furnaces at too low a price, for he cannot continue and pay his furnace bill. (But perhaps the books of the manufacturer would give him that information.)

The manufacturer could then investigate and endeavor to help the dealer to estimate correctly so as to include a fair profit for his work.

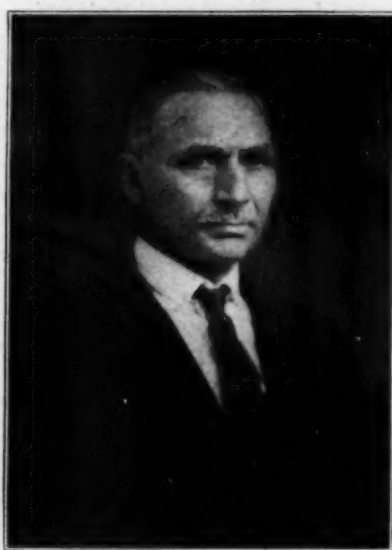
I trust some of the larger dealers will become interested in what you are doing for the furnace trade and cooperate by sending in their estimates on the two jobs used as examples.

"FURNACE SALESMAN."

Dirk Meyer, of F. Meyer & Brother, Tendered Banquet by Associates on 80th Birthday

Given Gold Headed Cane as Token of Esteem in Which Associates Hold Him

AN octogenarian and still active in business! That's Dirk Meyer, President of the Meyer Furnace Company and of the Vic-



Dirk Meyer, Who Celebrated His 80th Birthday September 24

tor Foundry, and Vice-President of F. Meyer & Brother Company, all of Peoria, Illinois, who celebrated his eightieth birthday on the 24th of September.

What his associates and fellow workers, to whom he is known as "Uncle Dick," think of Mr. Meyer

is revealed in the fact that a banquet was tendered in his honor by them at the Creve Coeur Club, Peoria, on Monday evening, September 24. There were twenty-five present at the banquet. A program appropriate for the occasion had been arranged, presided over by W. J. Bruninga as toastmaster.

George Harms, whom everybody in the sheet metal and warm air heating industries knows, and who has been associated with Mr. Meyer for over forty years, was the principal speaker of the evening. In the course of his address Mr. Harms related the history of the business and the active part that Mr. Meyer has had and still has in it. He told of many outstanding instances, both humorous and otherwise, in which Mr. Meyer proved himself equal to the demands of the situation which confronted him.

F. C. Heiden of the Victor Foundry Company also spoke during the evening, and just before the ceremonies of the evening were concluded Mr. Meyer was presented with a beautifully engraved gold-headed cane as a token of the esteem in which his associates hold him.

Mr. Meyer was born in 1848, two years after the Mexican war, one

year before the great California gold rush, and twelve years before the great emancipator had taken the office of President of the United States.

The Meyer interests, which today occupy a prominent position in the industrial life of Peoria, had their beginning in 1872, when Mr. Meyer joined his brother Frank in the tinware and hardware business, taking the firm name of F. Meyer & Brother Company, the name which this same parent company bears today, after 56 years service to the public.

As time went on, the scope of service which the company gave expanded until not only were they doing a thriving business in the retail hardware and general sheet metal lines, but an offshoot sprang into existence in the furnace pipe and fittings line, and along with this came the warm air furnace business, which in turn created the Meyer Furnace Company, makers of Weir furnaces, and the Victor Foundry, both incorporated and outstandingly successful in their service to the public.

And in all these children in whose formation Mr. Meyer had an active part, watching them take root in the industrial field and grow into useful manhood under his careful guidance, Mr. Meyer still takes an active interest. They are his life, and he is to be congratulated upon his long and straightforward career of usefulness to his fellow man which they represent. He can take deep satisfaction in the knowledge that during his long life he has been and is of service to humanity. His tireless efforts have resulted in making the world a better place in which to live.

Electric Hammer Speeds Installation Work

Both the heating contractor and the oil-burner installation crew will find many applications for the new electric hammer announced by Black & Decker Co., Baltimore, Md.

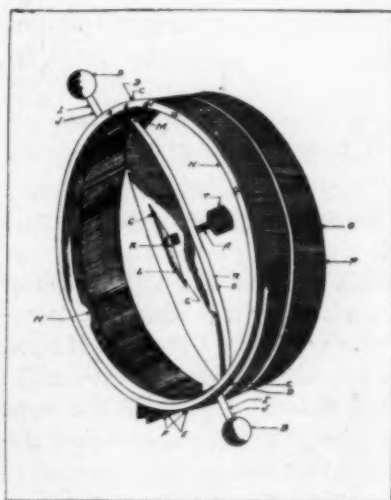
This hammer strikes 2,300 sharp, hard blows a minute contrasting

with 50 or 60 less effectual blows per minute, struck by the average workman with a sledge hammer.

Tests show that this hammer will cut a 1-in. hole in concrete at the rate of 3 inches per minute, or in brick at the rate of 8 inches per minute. A 3-foot by 10-foot hole was cut in a 12-inch reinforced concrete floor in 8 hours, and an average of better than one hole per minute was made for theater seat expansion bolts 9/16 inch diameter and 2½ inches deep.

New Draft Adjustor Makes Its Appearance to Aid Furnace Installer

To a great extent the amount of draft a heating unit gets determines the amount of fuel that unit will



The Draft Adjustor

consume and the efficiency it will develop. Therefore it is easily seen that a correct balance between the draft and the fuel supply is the most important factor affecting the service obtained from the heating unit, and the matter of securing proper draft regulation takes on primary importance.

The Draft-A-Justor Corporation, 513 West Jackson Boulevard, Chicago, has recently developed what is termed by them the Draft-A-Justor, a new and improved device for making minute adjustments to the chimney draft of any heating unit regardless of the type of fuel used.

The accompanying illustration

gives the reader an idea of the appearance of this new device.

The company has compiled a manual which not only describes in detail the mechanical phases of the draft adjustor, but outlines its advantages when used in conjunction with heating installations using oil as fuel, coal, coke, showing the efficiencies developed with and without the regulator in place.

The manual also contains a well tried catechism which the warm air furnace installer can use to good advantage in overcoming sales resistance encountered, and with this are suggested letters for use in a direct mail campaign. Suggestions for window displays and for the wording of newspaper advertisements are also included in the manual, making it a very instructive and informative compilation which the furnace installer should have in his active files.

Greater Chicago Warm Air Heating to Change Mode of Meetings

A meeting of the Greater Chicago Warm Air Heating Association was held in the Sherman Hotel Monday evening, September 24, with President L. M. Burt and Secretary Fred Goodall officiating.

Among other things it was decided to change the character of the meetings of the association and to have them open with a dinner in one of the hotels outside of the "loop" district so that there will be no difficulty in parking automobiles of those attempting to attend the meetings.

It is thought that with an arrangement of this kind prevailing, more interest will be forthcoming from the members and a greater good will accrue from attendance at the meetings.

A very interesting discussion of experiences met with in the installation of warm air heating plants was indulged in by various members in attendance, President Burt, Secretary Goodall, Rudy Guenther, Bill Wahler and G. A. Olson contributing freely of their rich experience.

Does Greater Buying Power Permit Lower Prices on Installations?

Here's One Furnace Installer's Reaction to Mr. Mayers Inquiry

By GEORGE C. JORDAN

DIFFERENCES in price asked by different men to heat a certain house is a matter of constant irritation to furnace men.

Just for comparison, let us assume that in a certain town there are two first-class heating contractors, both paying the same wage scale. If the first man has originality enough to train and develop a Whiz Bang installer, that can go out with a helper and complete a job in, let us say, four days, while the second man allows his installer to remain on the same kind of a job eight days, then the second man's labor cost will be 100 per cent more than the first.

Then again, let us assume that they both use a high-grade furnace which, bought in single lots, are equal in price.

The first man, due partly to his saving in labor, is just naturally going to sell more jobs than the second man, and unless he is a bigger fool than I think he is, he is going to holler for that little old extra 10 per cent, or maybe he will buy a carload, in which case he may ask for an extra 10—5 per cent, with freight allowed. Right here is where I will probably meet with opposition from some manufacturer, who will claim that I have stretched my imagination 5 per cent.

But don't let them kid you. It is the old buying power showing up. Hence the chain stores.

And so we may go on down the line. Fittings which the first man may buy at a 25—10 per cent cheaper price than his competitor. Registers that he may buy at 25 per cent less than his competitor. He may further know of some item which enters into a furnace installation that he can make in his shop cheaper than he can buy it.

Now then let us assume again that both of these heating contractors do a first-class job, according to the Standard Code. Will you tell me what chance the second man has with the first, and how in heck you could determine the first man's margin of profit by looking at the second man's quotation for a certain job?

One could go on indefinitely, stating reasons why no two men ever arrive at the same figure for a heating plant. I have designed heating plants only to turn around and redesign them in a manner that, in my opinion, was better engineering and still show a saving in installation cost.

Sit in some time at the opening of bids for the heating of some building. One where the architect has asked for a heating plan to accompany bids. Observe, if you please, the decided difference in plans submitted. All to the same end, but different manners in arriving at that end.

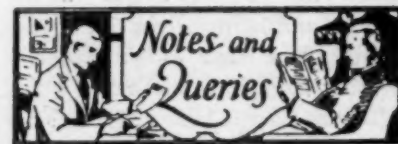
I have been there and helped "skin 'em," folks. Beaten to a frizzle, and I'll be damned if I could criticize the other man's layout because it worked.

No, sir, it can't be done. No two estimates will ever be the same.

There are today thousands of men in the heating business that seem to think that fifteen or twenty furnaces a year will give them a good living and a profit.

When your competitor outsells you five to one, don't always think he is losing money. He is simply nosing you out at the barrier. Stay up nights to get that added volume so you, too, can get that extra 10 per cent or 25 per cent, which, let me repeat, is

The Old Buying Power.



"Lennox" Shears

From The S. M. Howes Company, Boston, Massachusetts.

We should like to know who makes the "Lennox" shears for cutting sheet metal.

Ans.—Marshalltown Manufacturing Company, Marshalltown, Iowa.

"Richmond" Water Boiler

From J. A. Miller, Pigeon, Michigan.

Please tell me who makes the "Richmond" water boiler.

Ans.—Richmond Radiator Company, 410 North Michigan Avenue, Chicago.

Garage Oil Heater

From Green Foundry and Furnace Works, Des Moines, Iowa.

Will you please give us the name of a Chicago firm making a garage oil heater?

Ans.—Quaker Manufacturing Company, 215 North Michigan Avenue.

"Dasco" Tools.

From The Behler-Young Company, Grand Rapids, Michigan.

Please inform us who makes the "Dasco" line of tinner's snips and tools.

Ans.—Damascus Steel Products Company, Rockford, Illinois.

Cabinet Heaters.

From Richard Connelly, 359 East Washington Avenue, Elmira, New York.

Will you advise me who manufactures cabinet heaters?

Ans.—Detroit-Michigan Stove Company, Detroit, Michigan; The Waterman-Waterbury Company, Minneapolis, Minnesota; L. J. Mueller Furnace Company, Milwaukee, Wisconsin; The Fox Furnace Company, Elyria, Ohio, and Peninsular Stove Company, Detroit, Michigan.

Steel Sales Off But Production Gains

Consumers Filling Early Requirements and Prompt Metal Commands Premium

FOLLOWING several weeks of almost unprecedented activity, the iron and steel markets are more tranquil. Most consumers have specified fully their third quarter contracts, some have purchased supplementally, and for a majority the mildly-deferred condition of mill deliveries insures a good flow of material into October. With producers quoting higher prices on most products, the general run of consumers is content to absorb current commitments and defer making new ones.

But production is climbing to higher levels. September shipments of some large interests are setting an all-time record. As if to step into the breach as small and moderate-size buyers relax, tonnage outlets for iron and steel are opening up.

Pig iron prices appear to be holding firmly at recently advanced levels, but in steel the situation is more spotty. Such contracts as have been written for steel bars, plates and shapes have generally carried a \$2 rise.

Sheet producers are waging a determined fight for higher prices and a reduced cash discount; some large consumers have accepted both conditions, while others, notably some automotive interests, have tendered business on the old basis only to have it refused. Extensions of third quarter prices on tonnage requirements of hot rolled strip have been granted, but advances have been won from some cold strip users. No more than the usual irregularities are apparent in wire products. Semi-finished quotations have not yet been tested. Coke is steady and scrap is calmer.

Copper

Heavy demand for metal encountered during recent weeks has continued, and with it prices have advanced one-half cent during the past ten days. Copper is quoted at 15.25 cents, Connecticut, the highest

level in several years. It is estimated that close to 90 per cent of consumers' requirements for November have been covered, and as September-October metal is extremely scarce, any lots available for this delivery command a premium. Both domestic and export demand has been heavy.

With the increase in the price of copper, brass product prices also have been advanced and today these are based on copper at 15.25 cents, Connecticut. Demand for products has been extremely heavy and producers have been forced to push deliveries back.

Zinc

Aside from a curtailment in ore production, the zinc market has been quiet. It is expected that with a cut in the ore supply that the market will be supported in the face of a rather slow demand for metal. At 6.25 cents, East St. Louis, the market appears to be pegged at the moment, although talk of higher prices is heard.

Lead

Fair demand was encountered all week. Many buyers came into the market to cover their October requirements, and in view of the \$2 a ton increase effected in price some consumers deemed it advisable to protect themselves still further ahead. Total sales for the week are said to have exceeded in volume the contracts placed during any week of the year to date.

Tin

Some speculative bidding during the week caused a slight fluctuation in prices, but the tendency of the market has been steadily upward. Heavy consumption is keeping fairly well up to large production. Both dealers and consumers have bought metal lately.

Pig iron now is in a quiet market at Pittsburgh, with buying on a broad scale lacking. Some interests note better demand for foundry iron as regards the number of buyers

and the tonnage taken. This upturn, however, is only moderate, although the melt in this district is a shade heavier than a month ago.

Valley producers adhere to the higher prices announced a short time ago, but quietness of the market precludes an actual test, and reports of sales at these figures still are lacking. Small transactions in Bessemer and malleable are noted at \$17.25, valley, which generally is regarded as minimum. The market for basic iron is dull.

Competition from steel works for this grade is reported, and while occasional weakness is noted in the price, several sellers report they have not lost any business by quoting \$17.

Quiet negotiations are under way at Chicago for further tonnage of northern pig iron for fourth quarter.

Due to the approaching end of third quarter, spot sales have declined slightly from the recent high rate, but even with all available merchant furnaces in the district active, shipments are exceeding production and stocks are at the lowest point in months.

No plans have been made for greater production. The Gulf States Steel Co. still is producing foundry iron, and another furnace heretofore on basic is making foundry iron. The city furnace of Sloss-Sheffield Steel & Iron Co., rebuilt, will be blown in about November 1.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$16.50 to \$16.75; old iron axles, \$24.00 to \$24.50; No. 1 wrought iron, \$11.50 to \$12.00; No. 1 cast, \$14.00 to \$14.50; all per net tons. Prices on non-ferrous metals are quoted as follows, per pound: Light copper, 10¼ cents; zinc, 3¼ cents; cast aluminum, 11¼ cents.

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

PIG IRON

Chicago Fdy.,	
No. 2	\$18 50
Southern Fdy. No. 2	22 26
Lake Superior Charcoal	27 04
Malleable	18 50

FIRST QUALITY BRIGHT TIN PLATES

IC 20x28 112 sheets	\$25 10
IX 20x28	29 60
IXX 20x28 56 sheets	16 20
IXXX 20x28	17 55
IXXXX 20x28	18 95

TERNE PLATES

IC 20x28, 40-lb. 112 sheets	Per Box \$25 00
IX 20x28, 40-lb. 112 sheets	27 75
IX 20x28, 25-lb. 112 sheets	21 15
IX 20x28, 25-lb. 112 sheets	23 80
IC 20x28, 20-lb. 112 sheets	19 55
IV 20x28, 20-lb. 112 sheets	22 05
IC 20x28, 15-lb. 112 sheets	18 05

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including	
1/4 in.—100 lbs.	\$4 55

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$13 60
Cokes, 90 lbs., base, 20x28	13 80
Cokes, 100 lbs., base, 20x28	14 00
Cokes, 107 lbs., base, IC	
20x28	14 80
Cokes, 135 lbs., base, IX	
20x28	16 40
Cokes, 155 lbs., base, 56	
sheets	9 20
Cokes, 175 lbs., base, 56	
sheets	10 05
Cokes, 195 lbs., base, 56	
sheets	10 30

WIFE ANNEALED SHEETS

Base 10 ga. per 100 lbs.	\$3 35
"Armco" 10 ga. per 100 lbs.	4 00

ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs. \$3 60
No. 22	per 100 lbs. 3 75
No. 24	per 100 lbs. 3 80
No. 26	per 100 lbs. 3 90
No. 27	per 100 lbs. 3 95
No. 28	per 100 lbs. 4 05
No. 29	per 100 lbs. 4 20
No. 30	per 100 lbs. 4 30

"ARMCO" GALVANIZED

"Armco" 24	per 100 lbs. \$6 15
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GALVANIZED

No. 16	per 100 lbs. \$4 15
No. 18	per 100 lbs. 4 30
No. 20	per 100 lbs. 4 45
No. 22	per 100 lbs. 4 50
No. 24	per 100 lbs. 4 55
No. 26	per 100 lbs. 4 60
No. 27	per 100 lbs. 5 00
No. 28	per 100 lbs. 5 15
No. 30	per 100 lbs. 5 55

BAR SOLDER

Warranted	
50-50	per 100 lbs. \$30 75
Commercial	
45-55	per 100 lbs. 27 25
Plumbers	per 100 lbs. 24 25

ZINC

n Slabs	\$ 8 50
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SHEET ZINC

Cask Lots (600 lbs.)	\$11 25
Sheet Lots	12 25

BRASS

Sheets, Chicago Base	19 1/2
Mill base	18 1/2
Tubing, brazed base	27 1/2
Wire, base	18 1/2
Rods, base	16 1/2

COPPER

Sheets, Chicago base	24 1/2
Mill base	23 1/2
Tubing, seamless base	25 1/2
Wire, No. 9, B & S Ga.	19 1/2
Wire, No. 10, B & S Ga.	19 1/2
Wire, No. 11, B & S Ga.	20 1/2
Wire No. 3, B & S Ga. and heavier	

LEAD

American Pig	\$7 20
Bar	\$ 25

TIN

Pig Tin	per 100 lbs. \$55 75
Bar Tin	per 100 lbs. 56 75

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16	60 per lb.
Roll board	6 1/2 per lb.
Mill board 2/32 to 1/4	60 per lb.
Corrugated Paper (350 sq. ft. to roll)	\$5 00 per roll

BRUSHES

Furnace Pipe Cleaning	
Bristle, with handle, each	\$0 75

Flue Cleaning

Steel only, each	1 25
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BURRS

Copper Burrs only	40-2 1/4 %
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CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 45
American Seal, 10-lb. cans, net	85
American Seal, 25-lb. cans, net	2 25
Pecora	per 100 lbs. 7 50

CHIMNEY TOPS

Adams' Revolving	Wt. Doz. Price Doz.
4 in.	21 lbs. \$11 00
6 in.	24 lbs. 11 50
7 in.	30 lbs. 13 50
8 in.	33 lbs. 15 00
9 in.	51 lbs. 16 50
10 in.	56 lbs. 18 00
12 in.	66 lbs. 23 00
14 in.	110 lbs. 36 00

CLINKER TONGS

Each	\$1 50
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CLIPS

Damper	
No-Rivet Steel, with tail	
pieces, per gross	\$9 50
Rivet Steel, with tail	
pieces, per gross	7 50
Tail pieces, per gross	2 40

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier	per lb. 40c
2 1/2 lb.	per lb. 45c
2 lb.	per lb. 45c
1 1/2 lb.	per lb. 55c
1 lb.	per lb. 60c

CORNICE BRAKES

Chicago Steel Bending	
No. 1 to 6B	Net

CUT-OFFS

Gal. plain, round or cor. rd.	
26 gauge	30%
28 gauge	35%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.	\$1 50
8 inch, each 25c, doz.	2 25
9 inch, each 30c, doz.	3 00
10 inch, each 32c, doz.	3 20
Smoke Pipe	
7 inch, doz.	\$1 00
8 inch, doz.	2 20
9 inch, doz.	3 00
10 inch, doz.	3 75
12 inch, doz.	4 50

ADAMS No. 1 CHECK

Check and Collar Complete	
8 inch, each	2 00
9 inch, each	2 25
End Check Only	
8 inch, each	1 00
9 inch, each	1 25

Collar Only

8 inch, each	50
9 inch, each	65

No. 2 CHECK

8 inch, each	1 00
9 inch, each	1 00

10% Disc. on Adams No. 1 and No. 2 Check

Diamond Smoke Pipe	
7 inch, doz.	\$ 2 00
8 inch, doz.	3 20
9 inch, doz.	4 00
10 inch, doz.	4 50

Adams' Sheet Metal

7 inch, doz.	\$ 1 80
8 inch, doz.	2 20
9 inch, doz.	2 60
10 inch, doz.	3 00
12 inch, doz.	3 50
14 inch, doz.	5 00

EAVES TROUGH

Galv. Crimpedge, crated 75 & 10%	
Zinc, "Barner"	60%

ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 Gauge	60%
26 Gauge	45%
24 Gauge	15%

Galv. & Terne Steel

Plain Rd. and Rd. Corr.:	
28 Ga.	60%
26 Ga.	45%
24 Ga.	15%

Square Corrugated

No. 28 Gauge	60%
26 Gauge	35%

Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5%
Nested Solid	70 & 5%

Sq. Corr., A. & B. & Octagon

28 Ga.	50%
26 Ga.	35%

Portico

1", 1 1/4", 1 1/2"	45%
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Copper

16 oz., all designs	50%
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Zinc—

All styles	60%
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ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue	
"Milcor" No. 28 Gauge, Doz.	
5-inch	\$1 05
6-inch	1 20
7-inch	1 75

Special Corrugated

6-inch	\$1 00
7-inch	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform Blue.	
5-inch	\$1 65
6-inch	1 75
7-inch	2 10

WOOD FACES—50% off list.

FENCE

726-6-12 1/4 (100 rods)	\$25 60
1948-6-14 1/4 (100 rods)	43 62

FILES AND RASPS

Heller's (American)	50-10%
American	60-10%
Arcade	50%
Black Diamond	50%
Eagle	50%
Great Western	50%
Kearney & Foot	50%
McClellan	50%
McNelson	50%
Diamond	60%

FIRE POTS

Geo. W. Diener Mfg. Co.	Pa.
No. 02 Gasoline Torch, 1 qt.	\$ 15
No. 0250, Kerosene, or Gasoline Torch, 1 qt.	6 50
No. 10 Tinner's Furn. Square tank, 1 gal.	11 20
No. 15 Tinner's Furn. Round tank, 1 gal.	10 70
No. 21 Gas Soldering Furnace	1 40
No. 110 Automatic Gas Soldering Furnace	10 50

Quick Meal Stove Co.

Vesuvius, F. O. B. St. Louis	30%
(Extra Disc. for large quantities.)	

GALVANIZED WARE

Pails (Galv. afte made), 10-qt.	\$3 00
Tubs (Galv. after made), No. 1	5 75
No. 2	6 50

GLASS

Single Strength, A. 52-in. brackets	87%
Single Strength, 9, 34 to 40-in. brackets	87%
Single Strength, A. all other brackets	87%
Double Strength, A. all sizes	87%

HANGERS

Conductor Pipe	
Milcor Perfection Wire	25%
Milcor Triplex Wire	10%

Eaves Trough

Milcor Steel (galv. after forming) List	plus 13 1/2 %
Milcor Selflock H. T. Wire, List	plus 50 %

HOOKE

Conductor	
"Direct Drive" Wrought Iron for wood or brick	15%

HUMIDIFIER

"Front-Rank," Automatic	
In single lots	50%
In lots of 10 or more	50-5%
In lots of 25 or more	50-10%
Vapor pans, etc., each	50%

LIFTERS

Stove Cover	
Coppered	per gro. \$6 00
Alaska	per gro. 4 75

MALLETS

Tinners	
Hickory	per doz. \$3 25

MITRES

Galvanized steel mitrea.	
28 Ga.	70
26 Ga.	60-20

NAILS

Cut Steel	\$4 25
Cut Iron	4 25

Wire

Common	\$3 10
Cement Coated	3 10

Continued on Page 198)



Fire from Flint and Steel—

What a crude and laborious method of making fire! Yet, less than a century ago this was the general practice of the Indians in what is now the "West that Inland Serves."

Compare this with our modern stoves and furnaces, many of which are made of INLAND OPEN HEARTH STEEL SHEETS.

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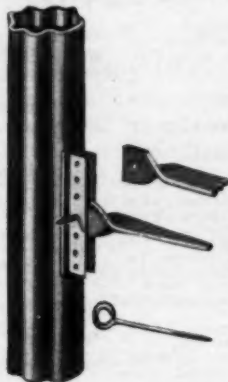
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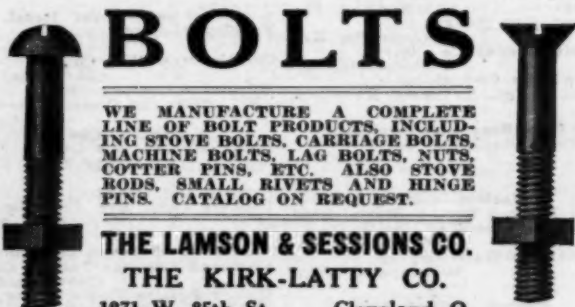
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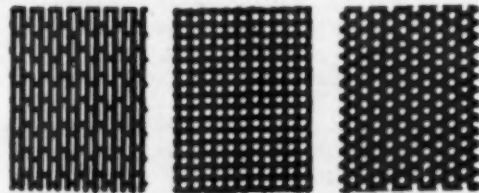


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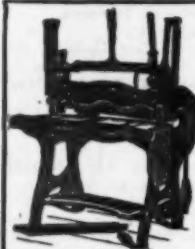
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Dries & Krump Mfg. Co.,
Chicago, Ill.
Hyro Mfg. Co., New York, N. Y.
Interstate Machinery Co.,
Chicago, Ill.
Marshalltown Mfg. Co.,
Marshalltown, Iowa
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Peck, Stow & Wilcox Co.,
Southington, Conn.
Ryerson & Son, Inc., Jos. T.,
Chicago, Ill.
Viking Shear Co.,
Erie, Pa.
Whitney Mfg. Co., W. A.,
Rockford, Ill.
- Torches.**
Burgess Soldering Furnace Co.,
Columbus, Ohio
Diener Mfg. Co., G. W.,
Chicago, Ill.
Quick Meal Stove Co.,
St. Louis, Mo.
Ryerson & Son, Inc., Jos. T.,
Chicago, Ill.
- Trade Extension.**
Copper & Brass Research As-
sociation, New York, N. Y.
Sheet Steel Trade Extension
Committee, Pittsburgh, Pa.
- Trimmings—Stove.**
Fanner Mfg. Co., Cleveland, Ohio
- Ventilators.**
Aeolus Dickinson Co., Chicago, Ill.
Akrot Ventilators, Inc.,
Chicago, Ill.
Arex Company, Chicago, Ill.
Berger Bros. Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
Kernchen Co.,
Chicago, Ill.
Lupton's Sons Co., David,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Standard Ventilator Co.,
Lewisburg, Pa.
- Ventilators—Ceiling.**
Hart & Cooley Co.,
New Britain, Conn.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Tuttle & Bailey Mfg. Co.,
New York
- Windows—Steel.**
Lupton's Sons Co., David,
Philadelphia, Pa.
- Zinc.**
New Jersey Zinc Co., The,
New York, N. Y.

WANTS AND SALES

Yearly subscribers to the **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired and must reach our office by Thursday of the week of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines, employment agencies and brokers.

When sending advertisement state whether your name or blind number is to be used.

BUSINESS CHANCES

Lightning Rods—Dealers who are selling Lightning Protection will make money by writing to us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable and Fixtures are endorsed by the National Board of Fire Underwriters and hundreds of dealers. Write today for samples and prices. L. K. Diddle Company, Marshfield, Wis.

SITUATION WANTED

Wanted Position—Traveling Ohio for furnace manufacturer. Can give proven sales record. At present employed. Address K-482 **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

If you are in need of a ventilation superintendent, first-class mechanic and estimator, one that can show you by past record as to low cost and large profits and if you can pay a good price for such a man, I would like to hear from you. Address E-482 **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

Year round situation wanted by A-1 all around sheet metal worker and furnace man. Can handle any branch of the trade such as cornice, skylights, heating and ventilating. Can make estimates and pattern drafting. 35 years' experience. Address T. W. Babb, 523 Margrave Ave., Ft. Scott, Kansas. F-482

Position wanted as branch manager for furnace manufacturer wholesale or retail Chicago territory. Qualified in all departments. Now employed but want to make a change October 1st. Address J-482 **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

First class sheet metal worker and tinner wants position. Can also do warm air furnace work and plumbing. Address R-482, **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

HELP WANTED

Wanted—Plumbers and furnace men. Good, steady, clean work. Prefer combination men who can install steam, hot water and furnaces. No boozers. Write at once to 461 11th Ave., Milwaukee, Wis. L-482

HELP WANTED

Wanted—Solicitor and estimator for shop, doing cornice, skylight, ventilating, blow pipe, hot air furnaces and general sheet metal work. Must be a practical sheet metal worker, able to take measurements and detail work when necessary. Address Y-482, care **AMERICAN ARTISAN**, 620 S. Michigan Avenue, Chicago, Illinois.

Wanted—A sheet metal worker who understands the fundamentals of the trade. Sober, ambitious and industrious. A new shop and plenty of work. Bright future. Address Earl L. Smith & Co., 518 West 4th St., Lexington, Ky. Q-482

Wanted—First-class manager and estimator. Must be familiar with plumbing, heating and sheet metal work and must be able to handle men. A real opportunity for a man who is seeking advancement. Write Independent Supply Company, West Frankfort, Ill. G-482

Wanted—All around furnace and sheet metal man. Hardware store in connection. Must be able to help out where needed. Good wages and steady job for right man. Address H-482 **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

Wanted—Two first-class sheet metal workers, southern locality. Permanent position. One dollar per hour. Write fully giving experience in different branches of business. Address X-482, care **AMERICAN ARTISAN**, 620 S. Michigan Avenue, Chicago, Ill.

Wanted—A first-class sheet metal worker. One able to lay out work, make and erect same. Union shop. Only good mechanics need apply. Address Z-482, care **AMERICAN ARTISAN**, 620 S. Michigan Avenue, Chicago, Illinois.

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name and
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miss any issues
your renewal
should be
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MISCELLANEOUS

For Sale or Trade—1 K. W. 32 volts Mathews full automatic electric light plant demonstrator used very little. 1 used set of Willard Storage battery in fair condition. Will sell or trade for anything that can be used in a plumbing or sheet metal shop or hardware store. Address P-482, **AMERICAN ARTISAN**, 620 So. Michigan Av., Chicago, Ill.

For Sale—1 new 25 lb. portable acetylene welding generator in original crating, manufactured by Economy Welding Machine Company, Kansas City, Mo. First \$115 check takes it. Guaranteed. Address Q-482, **AMERICAN ARTISAN**, 620 So. Michigan Av., Chicago, Ill.

TINNERS' TOOLS

For Sale—Complete set of tinner's tools. 1—3 foot die and crimp brake, 1—30 in. square shears, 1—30 in. bar folder, rolling, turning, burring, thick edge, crimpers, swedging, grooving. Complete set of stakes. All machines are like new. Price very cheap if taken at once. Address W-482, **AMERICAN ARTISAN**, 620 So. Michigan Av., Chicago.

Wanted—Used hand or power forming rolls for corrugated sheets. Give full description. Must be bargain. Address Sam H. Kerr, Lufkin, Texas. S-482

Wanted—Used 8 foot brake in good condition. State make and price in first letter. Address T. O. Westbrook, P. O. Box 300, Marshall, Mo. T-482

Wanted to buy—Good used Peck Stow Squaring Shear. Address C. H. Carpenter, Highmore, S. D. D-482

BOOKS

The problem of keeping an accurate set of books is one which gives many sheet metal contractors a lot of trouble. A new and very simple system called the National Faultless System makes it possible for you to be your own bookkeeper. It is really four books in one. It contains records for four years and ALL transactions and records for one month are recorded on ONE PAGE. This system eliminates cash book, day book and journal, but qualifies every transaction of a full month's business on one sheet. Many other features. Write, for full details, Book Dept., **AMERICAN ARTISAN**, 620 South Michigan Ave., Chicago.



**DRILL PRESS
STAND WITH
ELECTRIC
DRILL—
\$25.00
COMPLETE**

With Grinding and
Buffing Wheels and
Scratch Brush \$5.00
extra.

**DRILL LESS
STAND \$16.00**

**INTERSTATE
MACHINERY CO.**
(Formerly TINNERS' MACHY. CO.)
Sheet Metal Working Machinery
Tools and Shop Supplies
100 S. Jefferson St. Chicago, Ill.

BOOKS

Exhaust and Blow Piping, by Hayes—Exhaust and Blow Piping has had an unusually big demand. A fresh supply is now off the press and is in our hands for immediate delivery. It has an invaluable treatise on the planning, cost, estimation and installation of fan piping in all its branches giving all necessary guidance in fan work blower and separator construction. 159 pages, 5x8. 51 figures. Cloth, \$2.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

The Ventilation Handbook, by Charles L. Hubbard. A practical book designed to cover the principles and practice of ventilation as applied to furnace heating, ducts, flues and dampers for gravity heating; fans and fan works for ventilation and hot blast heating by means of a comprehensive series of questions, answers and very plain descriptions easy to understand. Price \$2.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.



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**TEST ITS PULLING POWER
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EFFICIENCY**
A Quality Product
Write for Information and Prices.
AKRAT VENTILATORS, INC.
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Here it is!

UNCOVERING HIDDEN PROFITS!

Simple INVESTIGATIONS disclose unusual Opportunities in the lives of most Sheet Metal Men. Losses can be stopped up in a surprising manner and the profit enjoyed for family comforts.

ADD ANOTHER \$1000 A YEAR TO YOUR INCOME!

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A Specialized Technical Training is a detailed investigation of your trade from A to Z. It gives you new ideas—new methods—new combinations for greater income. Such a Course of Training with us will uncover the truth—reveal leaks that now drain your financial strength, and show you how to Advance, strengthen and promote yourself in a larger, Successful and Independent way.

COME! IDENTIFY YOURSELF WITH THE NEW SCHOOL SEASON

THE ST. LOUIS TECHNICAL INSTITUTE is qualified to Coach you in a bigger Commercial way where we can open many opportunities like these for you:

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Yes, Sir! we train you in your own Home, Personal, Clear, Direct
Check your course. Write today before you forget it

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PATENTS

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FOR SALE

Our complete line of Simplex and Supreme Furnace pattern equipment and flasks at a tremendous sacrifice. Address Simmplex Furnace Company, Racine, Wis. T480

INDIANA AND WISCONSIN TERRITORIES OPEN FOR GOOD LIVE FURNACE SALESMEN WITH CLEAN RECORDS. WRITE IN FULL CONFIDENCE. ADDRESS B482, CARE OF AMERICAN ARTISAN, 620 SOUTH MICHIGAN AVE., CHICAGO, ILL.

SPECIAL NOTICES

SITUATION WANTED

A reliable, competent, successful steel and cast iron furnace salesman invites correspondence with a furnace manufacturer or jobber. Object—either a 1929 or immediate connection. Have best of references from former employers and am well up in engineering. A conference can be arranged if desired. Address M482, American Artisan, 620 So. Michigan Ave., Chicago, Ill.

AMERICAN ARTISAN ADS BRING RESULTS



Are You looking for more sales?

WARM Air Furnace and Furnace Supply Manufacturers who are desirous of securing high grade sales managers and worth while traveling men will find that a Special Notice advertisement in these columns will produce results.

AMERICAN ARTISAN

has put many a good man in touch with progressive manufacturers.

This is the best personnel market page in the field—use it.



AREX
Original
Siphonage
Ventilator

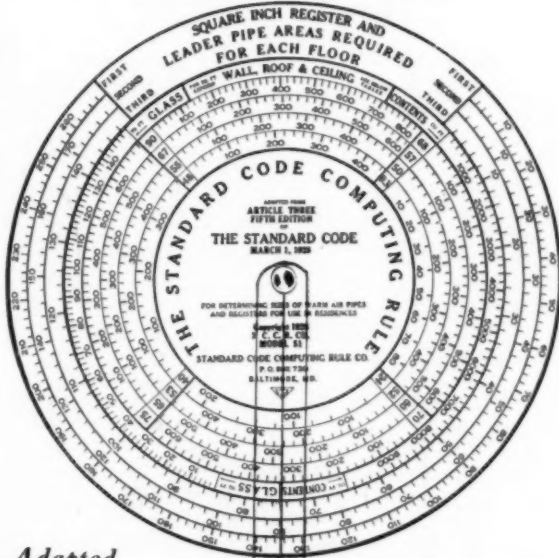
The
**Power
Fans**
Only Rival!

200,000 Perfect
Installations!

Write for prices today

AREX COMPANY 333 N. Mich. Ave. CHICAGO

The STANDARD CODE Computing Rule



Adapted from Article Three 5th Edition

of the STANDARD CODE

MARCH 1, 1928

Simple to Operate

THE Computing Rule is not a novelty, but, a well designed mathematical device, for figuring leader pipe and register areas for warm air heating systems. It has proven its accuracy in estimating and has passed the experimental stage. It is operated similar to an Engineer's slide rule.

The complete instructions are easily understood. You can learn to operate the Rule in less than one hour.

Results can be had without a single Division, Multiplication or Addition problem, as required in Article Three of the Standard Code. Not a chance for a mathematical error.

"Remember, you do not have to refer to a lot of loose parts or awkward tables."

Simplifies accurate estimating.

Handy Pocket Size

RULES are 5½ inches in diameter—¼ inch thick. Has an upper and lower revolving disc with a hairline indicating arm.

It is made of extra heavy and specially prepared celluloid, which reduces shrinkage and warping to a minimum. It is washable and unbreakable.

Can be carried comfortably in your pocket.

Here Is What The Computing Rule Will Determine:

- 1 The warm air pipe and register areas for First, Second and Third floor rooms.
- 2 The areas necessary for 70° inside temperature when the outside temperatures are ZERO, 10, 20 and 30 degrees ABOVE or BELOW zero.
- 3 The areas from the Contents, Glass, Wall, Roof and Ceiling. The factors as covered in Table "A" are represented in accurate form.
- 4 The areas for rooms having One, One and One-half and Two air changes per hour.
- 5 The Unusual Exposure requirements as the 10% for East and West and 15% for Northeast, North and Northwest rooms.

"Absolute Correct Results"

Price, \$3.00—Postpaid

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620 South Michigan Avenue
CHICAGO, ILLINOIS

Whitney Lever Punches

Widest known—Most universally used



Skyline Punch

NEW SKYLIGHT
CLOSE CORNER
FLANGE PUNCH



Skylight Punch

Every Sheet Metal Worker Needs One.

Weighs Only 10 Lbs.

1-2 Inch Opening Above Die Top.

EASIEST OPERATED
QUICKEST CHANGED
FREQUENTLY PAY FOR THEMSELVES
ON FIRST JOB

Over 40,000 In Use



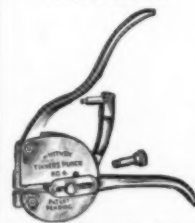
MADE IN 8 SIZES AND TYPES Channel Iron Punch
OTHERS FOLLOWING



No. 2 Punch

ASK YOUR JOBBER

or
Write us, for circulars and prices.



No. 4 Tinner's Punch

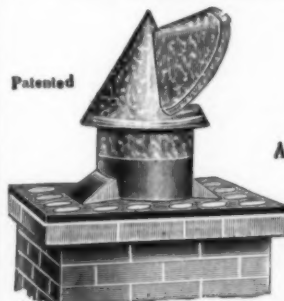
W. A. Whitney
Mfg. Co.

715 Park Ave.,
ROCKFORD, ILL.



No. 6 Punch

The NEW IMPROVED "STANDARD" ROTABLE VENTILATOR



Patented

THIS favorite ventilator has been further improved to insure—

Now made of
ARMCO IRON

Greater Durability
Quieter Operation
Greater Efficiency
Better Balance

The New Cone-top Suspension, new Bronze Guide Bushings, and Cross Braced Skirt are the new features.

Let us tell you in detail all about this better ventilator.

Write for special circular and prices today

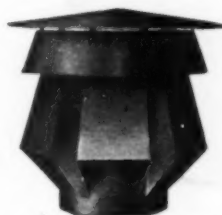
"Standard" Ventilator and Chimney Cap—
Most Efficient Combination on the market.

STANDARD VENTILATOR CO.,

LEWISBURG, PA.

ÆOLUS FOR HOMES

The home should be properly ventilated—few of them are. Here is a sales opportunity often overlooked by the average Sheet Metal Worker, but one which offers a lucrative business to those who take advantage of it.



The 12-Cylinder Ventilator
Used in Every State
in the Union.

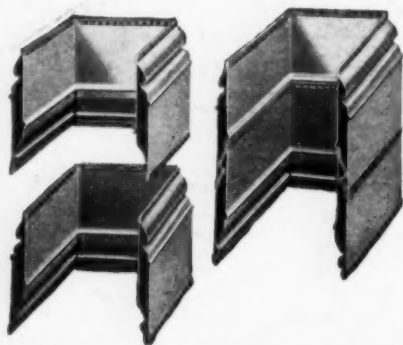
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VENTILATORS

Æolus-Dickinson

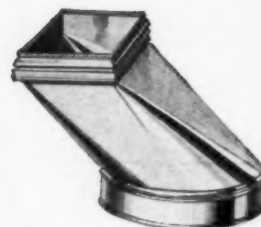
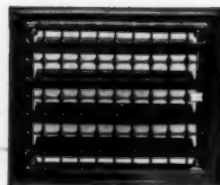
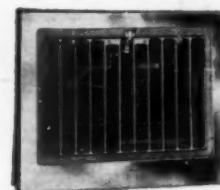
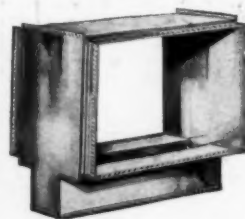
Vent. Makers Since 1888

3332-52 South Artesian Avenue
CHICAGO

Phone: Lafayette 1862-1863



All Milcor Double Wall Safety Furnace Pipe and Fittings are made without vents and with the "Titelock" joint feature shown above. The Milcor "Titelock" is $1\frac{1}{4}$ " deep and has two shoulders. The top shoulder is a long taper which guides the sections together. The second shoulder forms the lower part of the "Titelock", gives added firmness and supports the next section. This Milcor joint speeds up installation wonderfully and makes a permanently tight stack.



FASTER WORK: LOWER COSTS

Better Installations: More Business

MANY a furnace job is taken at figures so close to cost that slowed-up work results in loss. On these close-figured jobs, cheap, poorly made stack and fittings can't help. They only slow up work. Nor do they make satisfactory installations. Cheap stack and fittings fit together poorly and must be tied securely to studs or there's trouble.

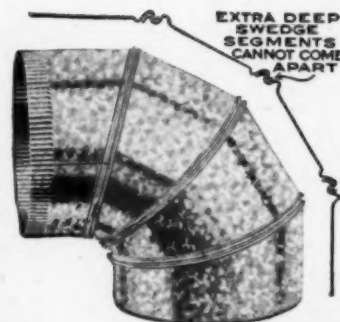
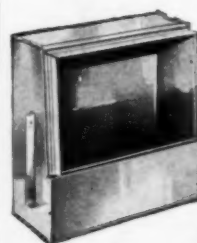
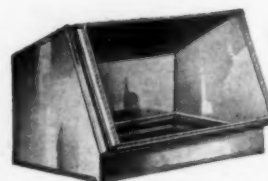
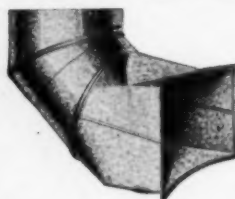
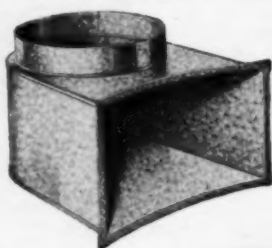
Milcor Furnace Stack and Fittings fit together perfectly and the Milcor Titelock joints hold them securely in alignment. They help to make warm air heating jobs satisfactory, easy to install and profitable.

The risk of slowed-up installations or poorly connected leads never occurs with Milcor Furnace Pipe and Fittings. Careful workmanship, standard materials, close inspection, keep them trouble-proof and speed up installations.

If you haven't the Milcor Catalog of Furnace Pipe and Fittings, No. 25, please write for one today.

Milwaukee Corrugating Co., Milwaukee; Wis.
Chicago, Ill. Kansas City, Mo. La Crosse, Wis.

MILCOR FURNACE FITTINGS



EXTRA DEEP
SWEDGE
SEGMENTS
CANNOT COME
APART

A
The